National Energy Board | Office national de l'énergie

Reasons for Decision

Westcoast Energy Inc.

GH-1-2002

January 2003

Facilities

103-02801/

National Energy Board

Reasons for Decision

In the Matter of

Westcoast Energy Inc.

Southern Mainline Expansion

GH-1-2002

January 2003

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Abbreviations

$10^3m^3/d$	thousand cubic metres per day
$10^6m^3/d$	million cubic metres per day
10^9m^3	billion cubic metres
Agreement	Agreement between Westcoast and BC Gas regarding transportation, tolling and contractual issues.
BC	British Columbia
BC Gas	BC Gas Utility Ltd.
BC WLAP	British Columbia Ministry of Water, Lands and Air Protection
CEA Act	*Canadian Environmental Assessment Act*
Cheam	Cheam Indian Band
CO_2	Carbon dioxide
CS	Compressor Station
CSA	Canadian Standards Association
CTC	Cariboo Tribal Council
DFO	Department of Fisheries and Oceans
Directions	Directions on Procedure, Order GH-1-2002
Duke	Duke Energy Gas Transmission Canada
EIA	Environmental Impact Assessment
EPN	Early Public Notification
EPRP	Environmental Protection and Reclamation Plan
ERP	Emergency Preparedness and Response Plan
Fort Nelson Expansion	Fort Nelson Mainline Expansion
FVRD	Fraser Valley Regional District
GJ	gigajoule
GSXCCC	GSX Concerned Citizens Coalition
Guidelines	National Energy Board *Guidelines for Filing Requirements (1995)*
Hope Ratepayers	Hope Ratepayers' Association
IDA	Inland Delivery Area
ISO	International Standards Organization
km	kilometre(s)
kPa	kilopascal(s)
m	metre(s)
mm	millimetre(s)
MMcf/d	million cubic feet per day
MOP	Maximum Operating Pressure
MS-16	Huntingdon Meter Station
NEB or the Board	National Energy Board
NEB Act or the Act	*National Energy Board Act*
NDE	Non-destructive examination
Northwest Pipeline	Northwest Pipeline Corporation
NO_x	oxides of nitrogen
OD	outside diameter
OPR-99	*Onshore Pipeline Regulations 1999*
PM	particulate matter
Project or Expansion Project	Southern Mainline Expansion
SCADA	Supervisory Control and Data Acquisition
Strategic Plan	*National Energy Board Strategic Plan 2001 to 2004*

SE2	Sumas Energy 2, Inc.
Tcf	Trillion cubic feet
TLUS	Traditional Land Use Study
TSB	Transportation Safety Board
US	United States of America
Westcoast or the Company	Westcoast Energy Inc.

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (NEB Act or the Act) and the Regulations made thereunder; and

IN THE MATTER OF an application dated 2 January 2002, and revised by letter dated 15 May 2002, from Westcoast Energy Inc. for a certificate of public convenience and necessity pursuant to section 52 of the NEB Act in respect of the proposed Southern Mainline Expansion.

IN THE MATTER OF the National Energy Board Directions on Procedure, Hearing Order GH-1-2002.

EXAMINED by means of an oral hearing held 8 and 9 July, 30 September, and 1, 3, 7, 8 and 9 October 2002.

BEFORE:

C. L. Dybwad	Presiding Member
J. S. Bulger	Member
E. Quarshie	Member

APPEARANCES:

J. Lutes	Westcoast Energy Inc.
M. Shoemater	BC Gas Utility Ltd.
R.W. Lusk	British Columbia Hydro and Power Authority
P. Grant	Cariboo Tribal Council Canoe Creek Band Xats'ull First Nation (Soda Creek)
Chief J. Quipp D. McDonald J. Stocco	Cheam Indian Band
R. Fraser	EnCana Oil & Gas Partnership (formerly AEC Marketing)
H. Sloan R. Smith	Fraser Valley Regional District
T. Hackney	GSX Concerned Citizens Coalition
R. MacDonald M. Houghton	Hope Ratepayers' Association
E. Abbs	Regional District of Fraser/Fort George
C. Thorstenson	Xats'ull First Nation (Soda Creek)

N. Bray	C. Bray
R. Dalton	On her own behalf
J. G. Degen	On his own behalf
G. Dixon	On his own behalf
I. G. Gregorig	On her own behalf
C. Hanson	R. Hanson, and on his own behalf
M. H. Hatch	On her own behalf
L. Hoekstra	On her own behalf
C. Horsfield	On her own behalf
R. McCormick	On his own behalf
G. Peachey	On her own behalf
R. D. Peachey	On his own behalf
K. C. Pincott	On his own behalf
J. Vissers	On his own behalf
D. L. Wood	On his own behalf
A. R. Hudson M. L. Haug	Board Counsel

Chapter 1

Introduction

1.1 Section 52 Application

On 2 January 2002, Westcoast Energy Inc. (Westcoast or the Company) applied to the National Energy Board (the Board or NEB) pursuant to section 52 of the NEB Act, for a certificate of public convenience and necessity authorizing the construction and operation of the proposed Southern Mainline Expansion.[1] In its application, Westcoast stated that the proposed Southern Mainline Expansion involves the addition of three key components to the Company's existing Southern Mainline pipeline system. The three key components include:

- upgrading compression facilities at Compressor Station (CS)-2B, CS-5 and CS-8B and upgrading compressor impellers at eight compressor stations on the Southern Mainline pipeline system;
- designing, constructing and operating 89.5 kilometres (km) of 1067 millimetre (mm) (42-inch) outside diameter loop pipeline in eight segments, along the route of the existing Southern Mainline[2]; and
- installing new custody transfer measurement facilities at the Huntingdon Meter Station (MS-16) located at the international boundary.

By letter to the Board dated 15 May 2002, Westcoast revised its application by reducing the scale of the proposed Southern Mainline Expansion. The change in scale was in response to an agreement reached between Westcoast and BC Gas Utility Ltd. (BC Gas) respecting a number of transportation, tolling and contractual issues. This agreement is discussed in greater detail in Chapter 4 of these Reasons.

The revised application eliminated two of the eight proposed loop segments and shortened the length of four of the remaining six loop segments by an aggregate of 21.9 km, resulting in a total length of 54.6 km of proposed loop pipeline. The revised application reduced the capital cost of the proposed Southern Mainline Expansion from approximately $338 million to $270 million. There were no changes made to the proposed compressor additions and meter station upgrades. The proposed Project would provide for additional capacity of approximately 5656 thousand cubic metres per day ($10^3m^3/d$) or 199.7 million cubic feet per day (MMcf/d) to the Southern Mainline system.

---

1 After the Application was received, Westcoast advised the Board that all issued and outstanding common shares of Westcoast had been acquired by Duke Energy Canada Exchange Inc., a subsidiary of Duke Energy Corp. and that Westcoast had begun conducting business as Duke Energy Gas Transmission Canada (Duke).

2 Loop pipeline refers to segments of pipeline that are added to an existing pipeline system between compressor stations, in order to increase the capacity of the system. The additional segments are usually installed alongside the existing pipeline and are shorter in length than the distance between compressor stations.

The proposed Southern Mainline Expansion as revised by Westcoast on 15 May 2002 is also referred to in these Reasons as the proposed Project or the proposed Expansion. The location of the components of the proposed Project are illustrated in Figure 1-1 and a comparison of the lengths of pipeline looping between the 2 January 2002 application and the 15 May 2002 revised application are shown in Table 1-1 below.

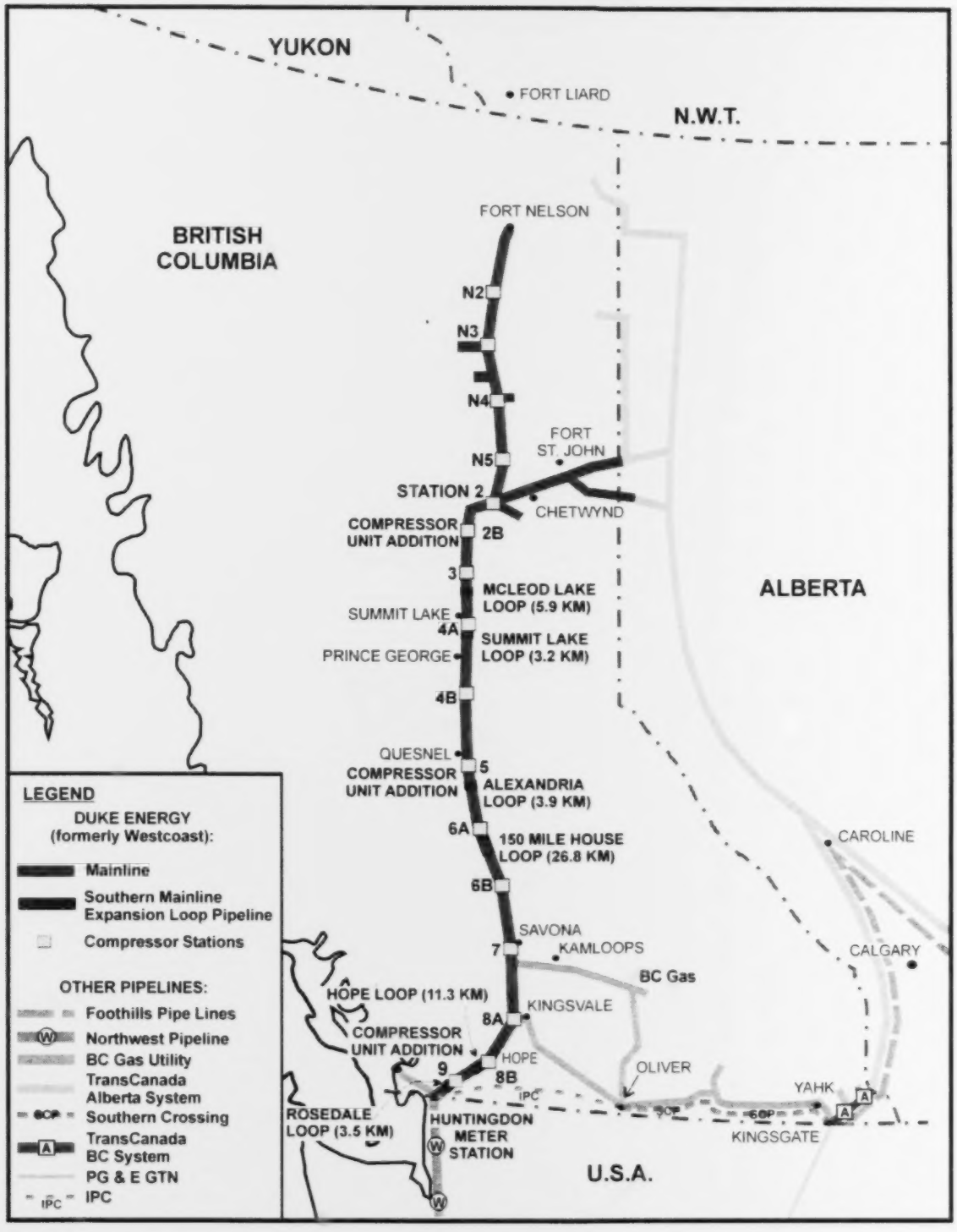
Table 1-1
Proposed Southern Mainline Expansion, Comparison of Pipeline Looping Between the 2 January Application and the 15 May Revised Application

	2 January 2002 Application		15 May 2002 Revised Application	
Loop Name	**Kilometre Post Location**	**Loop Length (km)**	**Kilometre Post Location**	**Loop Length (km)**
McLeod Lake	20.2 to 32.4	12.2	20.2 to 26.1	5.9
Summit Lake	0 to 9.7	9.7	0 to 3.2	3.2
Alexandria	10.1 to 18.5	8.4	10.1 to 14.0	3.9
150 Mile House	0 to 31.4	31.4	0 to 26.8	26.8
Lone Butte	0 to 6.5	6.5	Deleted	
Savona	8.8 to 15.3	6.5	Deleted	
Hope	0 to 11.3	11.3	0 to 11.3	11.3
Rosedale	0 to 3.5	3.5	0 to 3.5	3.5
Total Length		**89.5**		**54.6**

In addition to the application for a certificate of public convenience and necessity, Westcoast applied for the following:

- Relief from the requirement to file proforma financial statements, details respecting the proposed return on rate base and on provisions for income taxes, as well as a throughput summary, all as required by Part III, Subsection 25(b) of the National Energy Board's *Guidelines for Filing Requirements (1995)* (Guidelines).
- An Order that, with respect to the facilities applied-for, the piping systems being designed and constructed in accordance with ASME B31.3-1996 that are not to be used to transport sour substances and that have design pressures of 2000 kPa or less, be exempt from the requirements of Order MO-08-2000 subject to the condition that Westcoast must perform non-destructive examinations on the exempted pipeline systems in accordance with the specification or standard to which the systems are designed, and with due consideration to the risk imposed by these systems.
- An order confirming that the rolled-in toll methodology will apply to the proposed Expansion facilities and that the toll for the 105 MMcf/d of firm service to be provided by Westcoast to BC Gas from Kingsvale to Huntingdon be the Inland Delivery Area (IDA) Differential Toll.
- Such further and other relief as Westcoast may request or the Board may deem just.

Figure 1-1
Westcoast Southern Mainline and Proposed Southern Mainline Expansion



1.2 Public Hearing of the Application

The Board decided to consider the application in an oral hearing. Hearing Order GH-1-2002, issued 6 March 2002, set out the Directions on Procedure (Directions) for the oral hearing of the application. The Directions included a List of Issues (Appendix I) that would be considered by the Board through the hearing process. The hearing was held in two phases. Phase I was held in Abbotsford, British Columbia (BC) on 8 and 9 July 2002 for the purpose of considering matters related to Issue No. 1 of the List of Issues. Phase II of the hearing was held in Chilliwack, BC on 30 September, and 1, 7, 8 and 9 October 2002, and in Williams Lake, BC on 3 October 2002 for the purpose of considering matters related to Issues No. 2 to 6 of the List of Issues.

During Phase II of the hearing Westcoast undertook to file its final TLUS for each of the proposed Project pipeline loop segments. The Board received the TLUS for these pipeline loop segments from Westcoast on 11 December 2002. In its cover letter to the Board, Westcoast stated that due to the voluminous nature of the documents, it filed the TLUS with the Board and government agencies only, and would provide copies to interested parties upon request. In a letter to all Parties dated 12 December 2002, the Board directed Westcoast to provide copies of the TLUS to all parties to the GH-1-2002 proceeding. The Board stated that Parties wishing to comment on the material provided by Westcoast may do so by filing their written comments with the Board, with a copy to Westcoast, by 19 December 2002 and that any reply from Westcoast must be filed by 20 December 2002. The Board did not receive any comment from Parties and as a result, no reply from Westcoast.

1.3 Public Engagement in the Hearing Process

Upon the filing of the application, the Board directed Westcoast to publish a *Notice of Proceeding* in several local and major newspapers in circulation throughout BC. The notice invited the public to submit comments to aid the Board in gauging the nature and level of interest in the proposed Project, prior to the Board establishing a more formal process to consider Westcoast's application. In response to the notice the Board received letters of comment from several persons who expressed an interest in the proposed Project. They raised questions regarding the authority of the Board, the Board's processes for consideration of the application and how interested persons may participate in the Board's processes. In response, the Board held a series of Public Information Sessions at locations along the route of the proposed Southern Mainline Expansion, issued Procedural Update letters and conducted procedural information meetings prior to convening Phase II of the hearing in Chilliwack and Williams Lake, BC.

The Public Information Sessions were planned and conducted by Board staff and held during the week of 8 April 2002. The sessions were held in Chilliwack, Hope, Savona, Williams Lake, Quesnel and Summit Lake, BC. The purpose of the sessions was to introduce the public to Board staff, to describe:

- the application;
- the Board's jurisdiction and role in the regulation of pipelines in Canada;
- the Board's public hearing process;
- the List of Issues to be considered by the Board at the GH-1-2002 hearing;

- the Board's procedures under the NEB Act and the *Canadian Environmental Assessment Act* (CEA Act); and
- to answer any questions related to the Board or its processes.

The sessions did not include any discussion on the details or merits of the application and interventions.

The Board also wrote to the 21 First Nations which Westcoast identified in its application as having an interest in the proposed Project, as well as the Red Bluff First Nation and the Nicola Tribal Association, to notify them specifically about the upcoming public information sessions and to offer to meet with them individually for the same purpose as the public information sessions. The Nicola Tribal Association and the Cariboo Tribal Council (CTC) responded and Board staff met with them in Merritt and Williams Lake respectively during the week of 8 April 2002. The same information was provided to them as was provided at the previous public information sessions.

Prior to the commencement of each phase of the hearing, the Board issued to all parties a Procedural Update letter. Procedural Update No. 1 was issued on 19 June 2002 and provided information on the following topics:

- the purpose of the two-phase hearing process;
- motions and preliminary matters;
- information requests;
- distribution of evidence and information requests;
- written direct evidence and oral cross examination;
- argument;
- the time the Board will take following the close of the hearing to make its decision; and
- Board Information Bulletins.

Procedural Update No. 2 issued by the Board on 10 September 2002 provided information on the following topics:

- the Directions on Procedure;
- filing of information requests regarding Issue 4;
- the filing of Letters of Comment; and
- procedural information meetings to be held prior to Phase II of the hearing.

Prior to commencement of the oral hearing in Chilliwack on 30 September and in Williams Lake on 3 October 2002, Board staff conducted procedural information meetings. The purpose of these meetings was to introduce participants to the hearing room, describe how the hearing would be conducted and to answer any questions regarding hearing procedure.

The hearing provided an opportunity for the Board to receive the views of those persons who may be affected by the proposed Project. It also provided the opportunity for those persons who were granted intervenor status to ask written questions about the evidence on the record, ask questions directly of Westcoast's witnesses, file evidence of their own and respond to questions on that evidence. Intervenors also had the opportunity to present argument to the Board and respond to argument of the Applicant. The GH-1-2002 hearing provided a complete record from which the Board can make a final decision on the proposed Project.

Chapter 2

Board Rulings

During the course of the GH-1-2002 proceeding the Board considered two motions of significance and issued rulings on those motions. Those rulings are summarized in this chapter.

2.1 Board Ruling on the GSX Concerned Citizens Coalition Motion and Review Application

On 24 July 2002 the GSX Concerned Citizens Coalition (GSXCCC) filed a motion with the Board asking that the Board order Westcoast to answer certain Information Requests. The Board received comments from other parties respecting the GSXCCC motion. In its Decision No. 1 issued on 5 September 2002, the Board determined that Westcoast had adequately answered, or otherwise addressed, certain of the Information Requests. The Board denied the motion regarding the balance of the Information Requests, all of which related to the environmental effects of the end use of the gas to be transported by the Project. The denial was based on the Board's conclusion that the information requested was not relevant to the Board's determination under the NEB Act nor was it required for the purposes of the CEA Act.

By letter dated 26 September 2002, GSXCCC filed with the Board a Notice of Application for Review of the Board's Decision No. 1 in respect of the denied Information Requests. The Board, after hearing submissions, ruled on the motion during Phase II of the hearing. In the ruling the Board stated:

> As Decision No. 1 is an evidentiary ruling concerning certain Information Requests sent by GSXCCC to Westcoast, in the Board's view, the present motion is premature. GSXCCC cannot know until the conclusion of the proceeding whether a review of the Board's Decision No. 1 will be necessary. Furthermore, the Board makes numerous evidentiary rulings throughout the hearing. Reviews or appeals during the hearing process would cause unnecessary delay.

Accordingly, the Board decided that the Application for Review was premature and dismissed it without prejudice to the motion being refiled.

2.2 Board Ruling on Cariboo Tribal Council Motion

On 27 September 2002 the CTC filed a Notice of Motion relating to consultation with First Nations. In the motion, the CTC requested orders from the Board to amend its intervenor status to allow for affidavit evidence in support of its motion and to add First Nation consultation issues to the List of Issues. It also sought a determination of those consultation issues and, pending that determination, a stay of proceedings insofar as they concerned the proposed Project's impacts on the CTC and a stay of the final CEA Act decision.

The Board decided to hear argument on the motion on 3 October 2002 in Williams Lake, BC. However, at that time counsel for the CTC indicated that the Attorney General of Canada had requested an adjournment regarding the determination of the consultation issues. As neither the CTC nor Westcoast

objected to the adjournment, the Board adjourned the hearing on the relief requested in paragraphs 4 and 5 of the CTC Notice of Motion to a later date.

As there was no opposition, the Board granted the orders relating to intervenor status, affidavit evidence and the list of issues.

The Board concluded:

> We will be adjourning the evidentiary phase of the hearing as it relates to the issues set out in the CTC motion. Counsel for the CTC confirmed that he was not suggesting that the hearing on other issues be delayed. The hearing will, therefore, continue here in Williams Lake and in Chilliwack next week. We will continue to hear evidence on other issues, and we will also hear argument on them. The questions of further evidence and argument will be addressed after the Board hears and addresses the CTC motion.

The CTC withdrew its motion before it was heard by the Board. It also withdrew its intervention and its assertion that there had been a failure to fulfill the obligation to consult with the members of the CTC regarding the NEB's consideration of the proposed Project. As a result no additional submissions were made regarding the First Nation consultation issues that had been added to the List of Issues at the request of the CTC.

Chapter 3

Engineering

3.1 Facilities Description

The Southern Mainline system begins at CS-2, approximately 40 km southwest of Chetwynd, BC and extends south to Huntingdon, BC, at the international border between Canada and the United States of America (US).

The Southern Mainline system currently has a total transportation capacity of 53,784 $10^3m^3/d$ (1899 MMcf/d) and after making some intermediate deliveries, can deliver up to 45,806 $10^3m^3/d$ (1617 MMcf/d) at its final delivery point at Huntingdon. The proposed Expansion would increase the system capacity from CS-2 to Kingsvale by 4099 $10^3m^3/d$ (145 MMcf/d) to a total of 49,905 $10^3m^3/d$ (1762 MMcf/d). The proposed Expansion would also increase the system capacity from Kingsvale to Huntingdon by 5656 $10^3m^3/d$ (199.7 MMcf/d) to a total of 59,440 $10^3m^3/d$ (2099 MMcf/d), and increase the delivery capacity to Huntingdon to 51,462 $10^3m^3/d$ (1817 MMcf/d).

3.1.1 Proposed Facilities Upgrades

The facilities upgrade as proposed in Westcoast's revised application are summarized in tables 3-1, 3-2 and 3-3.

Table 3-1
Summary of Compression Upgrades

Compressor Station	Proposed Upgrades
CS-2	No work to be done.
CS-2B	Installation of a new compressor unit*. Construction of a new building and auxiliary building. Installation of new compressor wheels. Retirement of one existing gas turbine. Relegation of one existing gas turbine for use during peak periods.
CS-3	Installation of new compressor wheels.
CS-4A	Installation of new compressor wheels.
CS-4B	Installation of new compressor wheels.
CS-5	Installation of a new compressor unit*. Construction of a new building and auxiliary building. Installation of new compressor wheels. Retirement of six reciprocating compressor engines.
CS-6A	No work to be done.
CS-6B	Installation of new compressor wheels.

Compressor Station	Proposed Upgrades
CS-7	No work to be done.
CS-8A	Installation of new compressor wheels.
CS-8B	Installation of a new compressor unit*. Construction of a new building and auxiliary building. Retirement of two reciprocating compressor engines.
CS-9	Installation of new compressor wheels.

* The new compressor units would have a power rating of 18.0 MW (International Standards Organization (ISO)) and consist of a single-stage centrifugal compressor and load wheel, driven by a gas turbine.

Table 3-2
Summary of Measurement Facilities Upgrades

Huntingdon Meter Station	Removal of six (6) 323.9 mm outside diameter (OD) orifice meter runs for replacement with six (6) 323.9 mm OD ultrasonic meter runs. Installation of a new filter scrubber and associated equipment. Installation of new 762 mm OD piping to connect the new filter scrubber to the existing station piping.

Table 3-3
Summary of Pipeline Looping

Loop	Location	Length (km)*
1 McLeod Lake Loop	Between CS-3 and CS-4A	5.9
2 Summit Lake Loop	Between CS-4A and CS-4B	3.2
3 Alexandra Loop	Between CS-5 and CS-6A	3.9
4 150 Mile House Loop	Between CS-6A and CS-6B	26.8
5 Hope Loop	Between CS-8B and CS-4B	11.3
6 Rosedale Loop	Between CS-9 and MS-16	3.5

* Loop lengths as revised by the Company on 15 May 2002.

3.1.2 Expansion Alternatives

Westcoast analysed the Southern Mainline to identify possible alternatives to accommodate the required expansion capacity. Two alternatives were considered for further analysis:

Alternative 1 - Pipeline loops and compressor upgrades
Alternative 2 - Pipeline loops only

The criteria used to define the potential alternatives and results of Westcoast's assessment of the two identified alternatives are shown in Table 3-4.

Table 3-4
Assessment of Proposed Project Alternatives

Criteria	Alternative 1 Pipeline Loops and Compressor Upgrades	Alternative 2 Pipeline Loops
Compressor station unit philosophy and operability[1]	Meets Criteria	Does not Meet Criteria
Station reliability and spare parts inventory optimization[2]	Meets Criteria	Does not Meet Criteria
Environmental and lands impact	Environmental benefits: a reduction of emissions of methane and oxides of nitrogen and noise emissions would meet Alberta Energy and Utility Board regulations.	Would result in much larger area of land disturbance and potential adverse environmental and land impacts.
Capital Cost	Lowest cost	Highest cost
Toll Impact	Lowest impact	Highest impact

1 Westcoast's longer-term plan is to have two compressor units in operation at each compressor station moving towards a fleet of modern common units.

2 Sourcing of replacement parts for the existing compressor units nearing the end of their service life creates maintenance issues and reliability risk for the Southern Mainline.

Westcoast selected Alternative 1 on the basis of lower capital cost, lower toll impact, less environmental impact, and better fit with facility operations and maintenance strategies.

3.2 Appropriateness of the Design

The proposed facilities would be designed, constructed and tested, as applicable, in accordance with Canadian Standards Association (CSA) Z662-99, the provisions of the NEB Act, the *Onshore Pipeline Regulations 1999* (OPR-99), other appropriate governing legislation and codes and Westcoast's specifications.

The pipe to be used in the proposed Project would meet CSA Z245.1-98 and Westcoast Specifications No. SP-51-01. All valves, fittings and flanges would be in accordance with CSA Z245.15-96, CSA Z245.11-96 and CSA Z245.12-96, respectively.

3.2.1 Pipeline Looping

Westcoast stated that in its 1995 Southern Mainline Application (approved by Board Order XG-W5-27-95, 22 June 1995) it established that a 1067 mm OD is the preferred size for its third pipeline

on the Southern Mainline system. The design specifications of the proposed pipeline looping are summarized in Table 3-5.

Table 3-5
Pipe Specifications for the Proposed Pipeline Looping

Outside Diameter (mm)	Wall Thickness (mm)	Material Grade (mega-pascals)	Design Factor	Location Factor	Area Usage	Approximate Length (km)
1067	13.4	550	0.72	1	Class 1	32.2
1067	13.4	550	0.8	0.9	Class 2	16.2
1067	16.1	550	0.8	0.75	Roads in Class 1 and fabrications	0.9 0.3
1067	17.2	550	0.8	0.7	Class 3	3.7
1067	19.3	550	0.8	0.625	Roads in class 2 & 3, station facilities, railway crossings	1.1 0.1
						Length 54.5
Design Pressure 9930 kPa Design Temperatures -5°C (below ground), -45°C (above ground) All line pipe would be Category II to provide positive control of fracture propagation.						

Westcoast would meet or exceed CSA Z662-99 in its determination of the pipe wall thickness. Due to the rugged BC terrain, Westcoast chose to exceed these standards for the pipe of Class location 1 by increasing the wall thickness 11 percent beyond what is required.[1]

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[1] (CSA) Z662-99 states that Class location designations shall be determined on the basis of class location assessment areas and on the buildings, dwelling units, places of public assembly, and industrial installations contained in such areas. Assessment areas are 1.6 km long and extend 200 metres on both sides of the centreline of the pipeline.

Class 1 - assessment areas that contain 10 or fewer dwelling units.
Class 2 - assessment areas that contain more than 10 but fewer than 46 dwelling units.
Class 3 - assessment areas that contain 46 or more dwelling units.
Class 4 - assessment areas where buildings intended for human occupancy with 4 or more storeys above ground are prevalent.

3.2.1.1 Maximum Operating Pressure

Westcoast stated that the new pipeline loop and new compressor units would be designed to a maximum operating pressure (MOP) of 9930 kPa. The two existing pipelines on the Southern Mainline system were designed to operate at a MOP of 6455 kPa. Until the new 1067 mm OD loop can be isolated from the two existing pipelines, it would operate at the lower operating pressure of the existing pipelines (6455 kPa) which, in effect, means the new loop would have some pre-built future capacity.

The cost of this pre-built capacity is $5 million, which is the difference in pipe cost between Westcoast's high pressure steel and the steel that would be required to operate the proposed looping at 6455 kPa. Westcoast stated that when the new 1067 mm OD pipeline is complete it would cost 35 percent less than the cost to build the same capacity in a pipeline designed to an MOP of 6455 kPa. It submitted that the incremental cost of designing and constructing the proposed loops to a higher MOP will decrease in the future due to development and utilization of higher grade steels for the pipeline material. Utilization of a higher grade steel allows the specification of a thinner wall thickness pipe to save on material, while maintaining the required strength.

3.2.1.2 Increased Pressure at CS-7 and Savona Loop

The design of the proposed Project specifies increasing the MOP from 6455 kPa to 7250 kPa for the CS-7 compressor station and 8.6 km of the 1067 mm OD pipe downstream of CS-7. All of the gas entering CS-7 would be discharged into the 1067 mm OD pipeline at the increased MOP. The 1067 mm OD pipeline would tie back into the 762 mm OD and 914 mm OD pipelines at a point 8.6 km downstream of CS-7.

Westcoast stated that this increase in MOP and modification to the flow configuration would compensate for pressure loss that occurs downstream of CS-7 due to a 770 metre (m) rise in pipeline elevation. This approach to overcoming the pressure loss eliminates the need for approximately 3 km of additional 1067 mm piping that would otherwise be required to overcome the pressure loss resulting in a cost savings of approximately $6 million.

3.2.1.3 Geotechnical Considerations

Westcoast provided a report titled *Geotechnical Report on Proposed Southern Mainline Loops 2003 Expansion* prepared by AMEC Earth and Environmental Limited. This report identified slope stability issues related to the placement of the new Southern Mainline loops. Westcoast stated that the slope stability issues identified in this report would be managed by using appropriate construction techniques and operational procedures.

3.3 Safety Considerations and Quality Assurance

3.3.1 Non-destructive Examination

Non-destructive examination (NDE) would be completed in accordance with the requirements of CSA Z662-99 and OPR-99 for pipeline piping, the compressor and meter facilities piping. All joining would be 100 percent inspected except for some auxiliary piping systems.

Westcoast has requested exemption from Board Order MO-08-2000 and the provisions of Section 17 of the OPR-99 with respect to the NDE of all welds as it pertains to auxiliary piping systems which would be designed and constructed in accordance with ASME B31.3-1999 and having a design pressure of 1034 kPa or less. Westcoast would carry out a minimum of 10 percent NDE for these piping components. Westcoast would follow the progressive testing rules of ASME B31.3. Westcoast stated that this exemption would not compromise the safety of the company's employees or the public.

3.3.2 Corrosion Protection

Westcoast stated that piping within the compressor stations and meter station would be protected from corrosion by using an external coating system and the existing cathodic protection system. Above ground piping would be primed and painted in accordance with Westcoast specifications.

Pipeline looping would be coated internally and externally. Padding material such as sand, foam and rock jacket would be used, as required, to protect the pipe and external pipe coating from damage. The proposed pipeline sections would also be connected to the existing cathodic protection system.

Westcoast stated that the external coating of the pipe would comply with the Company's specifications, and that those specifications meet or exceed CSA standards requirements. The cathodic protection system would be monitored in accordance with Westcoast's Pipeline Integrity Management Program.

3.3.3 In-line Inspection

The proposed pipeline loops would be designed to accommodate in-line inspection tools for future pipeline integrity inspections. Pig launchers and receivers would be installed on a permanent or temporary basis at each loop. In-line inspection would be performed every five to nine years.

3.3.4 Control, Monitoring and Leak Detection Systems

The control system for the proposed compressor station facilities would be a microprocessor-based system with remote input/output modules. Monitoring and control inputs would be from personal computer based operator consoles in the control room of each compressor station and from Westcoast's Gas Control Center in Vancouver. The control system would perform both facility control and safety shutdowns. Fire and combustible gas detectors in the compressor buildings would be continuously monitored by the control system.

The proposed meter upgrades at Huntingdon would be connected to the existing flow computer which is connected to the Supervisory Control and Data Acquisition (SCADA) system that is currently monitored by Westcoast's Gas Control Center in Vancouver, BC.

The pipeline looping would have automatic control systems and line break control valves to isolate the line in the event of a failure. The control systems would include pressure monitoring, flow monitoring,

and leak detection systems that would shut down the pipeline if prescribed operating parameters are exceeded. The control and safety systems would be connected to a central control alarm system, which would enable immediate notification to operating personnel of a potential problem. The control systems would be connected to the existing SCADA system.

The current SCADA system would be upgraded to accommodate all the necessary control equipment.

3.3.5 Quality Management Systems

Westcoast submitted that an overall Quality Management Program that would comply with the OPR-99 requirements would be utilized during the engineering, procurement and construction phases of the proposed Project. The program would include an audit plan to ensure that the proposed Project is designed and constructed in accordance with applicable regulations, codes, standards and specifications.

Westcoast also submitted that all construction activities would be subject to Westcoast inspection and quality assurance requirements.

3.3.6 Emergency Preparedness and Response

Westcoast made a commitment to update the Southern Mainline Emergency Preparedness and Response Plan (ERP) to include the proposed Expansion Project. The ERP would conform with the expectations set out in the Board's letter of 24 April 2002, issued to all oil and gas companies under the Board's jurisdiction to clarify the Board's expectations for emergency preparedness and response programs. Westcoast stated that it would file its ERP with the Board prior to commencing operation of the proposed Southern Mainline Expansion.

Views of the Board

Subject to the conditions described below, the Board is satisfied that the proposed facilities would be designed, constructed and operated in accordance with the NEB Act, OPR-99, CSA Z662-99, and other appropriate standards and governing codes.

Should the proposed Project be approved, the Board would impose conditions requiring Westcoast to submit various documents pursuant to the OPR-99. These documents would include:

- a construction safety manual;
- a joining program;
- Westcoast's pipeline construction specifications;
- a construction inspection program;
- a description of construction audit program;
- a pressure testing program;
- slope stability monitoring programs; and
- an emergency procedures manual.

The Board has determined that granting an exemption for some piping systems from the requirements of Order MO-08-2000 and Section 17 of the OPR-99 would not compromise the safety of the public or the employees of the company, or cause a detriment to property and environment. This determination would be subject to the condition that Westcoast shall perform nondestructive examinations on the exempted piping systems in accordance with the specification or standard to which the piping system is designed and with due consideration to the risk imposed by those piping systems.

The Board notes the safety and operational concerns raised by intervenors during the hearing. These concerns are addressed in Chapter 8 of these Reasons.

Chapter 4

Economic Feasibility, Gas Supply, Markets and Transportation Contracts

4.1 Economic Feasibility

The Board assesses the economic feasibility of gas pipeline facilities by determining the likelihood of the facilities being used at a reasonable level over their economic life and the likelihood of the demand charges being paid. A determination of economic feasibility normally includes an evaluation of such factors as the availability of gas supply, the long-term outlook for gas demand in the markets to be served, and the contractual commitments underpinning the proposal.

4.2 Supply

As outlined under Part III of the Board's Guidelines, unless the Board otherwise directs, the Board requires information for both shipper specific supply and for overall supply.

4.2.1 Shipper Specific Supply

Westcoast did not provide information concerning shipper specific gas supply. In its response to NEB information request 1.12, Westcoast stated that the referenced section of the Guidelines was no longer appropriate in the current gas market circumstances since it assumes that the holders of pipeline expansion service are either natural gas producers or holders of long term dedicated supply contracts with producers.

Westcoast stated that only one of the ten proposed Expansion Project shippers is a producer, and most of the shippers awarded expansion service are downstream customers whose primary business is power generation. These shippers are expected to acquire their gas supply in the market as appropriate.

Westcoast's principle justification for the proposed Project is the additional capacity contracted by the shippers. The proposed Project is also supported by Westcoast's assessment of the regional gas market and gas supply fundamentals.

4.2.2 Overall Supply

4.2.2.1 Reserves

Westcoast provided evidence on the established remaining marketable gas reserves (as of 30 September 2001) for northeast British Columbia, as shown in table 4-1 below.

Table 4-1
Established Remaining Marketable Gas Reserves for North East British Columbia, September 2001

Producing		Non-Producing		Total	
Tcf*	$10^9 m^3$**	Tcf	$10^9 m^3$	Tcf	$10^9 m^3$
7.1	201.1	2.3	65	9.4	265.0

* trillion cubic feet
** billion cubic metres

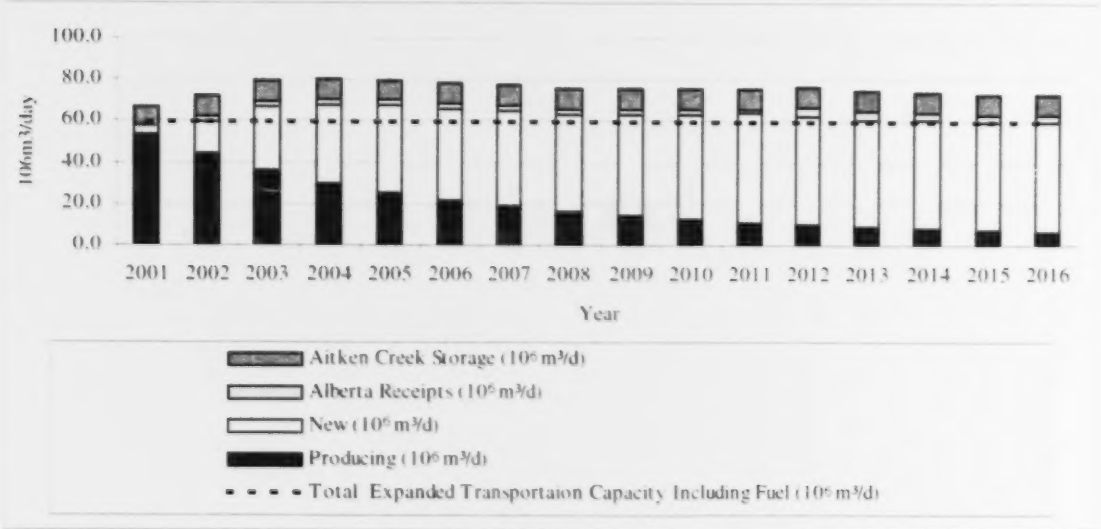
Marketable natural gas reserve additions from 2001 to 2015 were forecasted to be 295.6 $10^9 m^3$ (10.4 Tcf), an average of 19.7 $10^9 m^3$ (0.7 Tcf) per year.

In addition, Westcoast estimates of ultimate marketable gas resources for British Columbia, the southern part of the Yukon Territory and southwestern portions of the Northwest Territories that can be readily accessed by Westcoast's existing system were 50 Tcf, 1 Tcf and 4 Tcf respectively.

4.2.2.2 Deliverability

Westcoast's assessment of the overall reserves and deliverability that it forecasts will be available to the Mainline was presented in a series of tables in its Application. Figure 4-1 is a graph that summarizes the 15 year forecast of maximum day marketable gas deliverability versus the total expanded take away capacity, including fuel at CS-2, of the Mainline. Westcoast submitted that the forecast demonstrates that there is expected to be adequate supply available to the Mainline to allow it to be used to a high degree over the term of the forecast.

Figure 4-1
Westcoast's 15 Year Forecast of Maximum Day Marketable Gas Deliverability



4.3 Markets

The Southern Mainline system delivers gas to the interior and lower mainland markets of BC and to the export markets of the US Pacific Northwest.

Westcoast stated it serves four market areas in British Columbia: the service area of Pacific Northern Gas, which includes markets in the northwest and central area of the Province; the interior markets located along the Southern Mainline system, which are served by BC Gas; the lower mainland market, predominantly in and around the Vancouver area, also served by BC Gas; and the Centra Gas British Columbia Inc. market, which is primarily on Vancouver Island.

Most gas delivered by the Southern Mainline to the international boundary at Huntingdon-Sumas is transferred to the Northwest Pipeline Corporation (Northwest Pipeline), owned by Williams Pipeline. The gas received by Northwest Pipeline is predominantly destined for markets in Washington with relatively small amounts being consumed in Oregon, Idaho, and northern Nevada. Some volumes originating with Westcoast are also delivered to ARCO Western Pipeline Corporation, Sumas Cogeneration Company Ltd., and Cascade Natural Gas Corporation.

Westcoast provided an overview of current and future demand for natural gas in British Columbia and the US Pacific Northwest. A demand forecast was given for the core (residential and commercial), industrial, and power sectors, which indicated that an overall average annual growth rate of approximately 2.3 percent is expected over the fifteen year period from 2002 to 2016. The electrical power sector is anticipated to lead demand growth as gas fired generation facilities are developed in both Canada and the US. Westcoast noted that the power generation industry demand profile is very lumpy, meaning that at the moment a new gas fired plant comes on-line a large increase in demand occurs. Forward planning is required for this type of virtually instant demand shift.

Westcoast also provided market indicators specific to the Southern Mainline. Service for 5663 $10^3m^3/d$ (200 MMcf/d) of Southern Mainline attrition capacity sold for more than two times the firm service toll for the high demand period during the 2000-2001 winter season. When this capacity was later re-contracted beginning 31 March 2001, contract terms ranged from 13 to 18 years. In addition, Westcoast's 19 April 2001 open season produced two significant results. First, virtually all Southern Mainline firm transportation contracts with renewal rights were extended effective from 1 November 2002. Second, Westcoast received bids of 5656 $10^3m^3/d$ (199.7 MMcf/d) for new service. In all, Firm Service Agreements with a weighted volume average of 27 years were signed with ten Expansion Project shippers. Westcoast stated these occurrences, taken together, signalled a strong market need for the proposed Southern Mainline Expansion.

4.4 Transportation Contracts

As previously described, Westcoast held an open season commencing on 19 April 2001 for subscription of incremental firm transportation service. This resulted in the execution of Firm Service Agreements with ten proposed Expansion Project shippers for a total capacity of 5656 $10^3m^3/d$ (199.7 MMcf per day). Westcoast filed the Firm Service Agreement and a copy of the signed Firm Service Agreement signature page for each of the ten executed contracts, noting that the volume weighted average term was 27 years. Under the terms of the Firm Service Agreement, shippers are required to pay the applicable demand

charges regardless of the volumes actually transported on the pipeline. The agreements are summarized in table 4-2 below.

Table 4-2
Firm Service Agreements Resulting from 19 April 2001 Open Season

Expansion Project Shipper	Awarded Volume ($10^3m^3/d$)	Awarded Volume (MMcf/d)
AEC Oil and Gas Partnership	567	20
Avista Corporation	272	9.6
British Columbia Hydro and Power Authority	1416	50
Calpine Energy Services	1416	50
Grays Harbour County Washington, PUD No. 1	443	15.7
Franklin County Washington, PUD No. 1	367	13
Benton County Washington, PUD No. 1	254	9
Puget Sound Energy, Inc.	425	15
TransAlta Energy Marketing Corp.	213	7.5
Weyerhaeuser Company	283	10
Total Volume	5656	199.7

On 7 October 2002, Westcoast informed the Board that its annual contract renewal process had been completed on 30 September 2002 with the result that of the 29393 $10^3m^3/d$ (1038 MMcf/d) of transportation service that was subject to renewal, approximately 3851 $10^3m^3/d$ (136 MMcf/d), was not renewed effective 1 November 2003[1]. Westcoast stated that it would continue to rely on its market forecast and that it was not considered unusual to have this amount of unrenewed capacity after a contract renewal. Westcoast also stated that it was confident this released capacity would be recontracted within a reasonable time period and that action had already been taken to ensure potential shippers were aware that capacity was available. Westcoast explained that with its rolling two-year notice periods, this type of action is normal. Westcoast also noted that it would map and stage the proposed Expansion to market conditions to ensure a match between contracted capacity and pipeline capacity, and that the market fundamentals continued to be strong. Westcoast was confident that the Southern Mainline would remain fully contracted over the long-term and that the released capacity would be utilized on an interruptible basis in the interim.

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1 The information filed by Westcoast on 7 October 2002 described the volumes in imperial units. Where only imperial units were provided, the Board has converted from imperial (MMcf/d) to SI measurements ($10^3m^3/d$).

4.4.1 BC Gas Agreement

On 23 April 2002, Westcoast advised the Board that it had entered into an agreement with BC Gas (Agreement). Subsequently on 15 May 2002, Westcoast submitted an update to the January 2002 application, which outlined the details of the Agreement and changes to the original application as a result of the Agreement. Westcoast noted that the Agreement is considered to be a contract realignment and not expansion service. As such, the Agreement does not change the Firm Service Agreements entered into by Westcoast with the Expansion shippers.

Under the Agreement, which would take effect on the date the proposed Expansion facilities go into service:

- BC Gas would permanently relinquish to Westcoast 2973 $10^3m^3/d$ (105 MMcf/d) of firm Southern Mainline transmission service from CS-2 to Huntingdon; and
- Westcoast would provide BC Gas with 1416 $10^3m^3/d$ (50 MMcf/d) of firm Southern Mainline transmission service from CS-2 to Kingsvale and 2973 $10^3m^3/d$ (105 MMcf/d) of firm Southern Mainline transmission service from Kingsvale to Huntingdon.

The new Southern Mainline transmission service to be provided by Westcoast to BC Gas is set out in a separate service agreement between Westcoast and BC Gas, which has a term of 15 years.

Under the Agreement, BC Gas permanently released 1557 $10^3m^3/d$ (55 MMcf/d) of its contracted capacity between CS-2 and Kingsvale, leaving it available for the Expansion shippers.[1] The net result of the Agreement was that Westcoast would be able to reduce the physical size of the proposed Southern Mainline Expansion between CS-2 and Kingsvale from 5663 $10^3m^3/d$ (200 MMcf/d) to 4106 $10^3m^3/d$ (145 MMcf/d). The physical expansion of the Mainline between Kingsvale and Huntingdon would remain unchanged from the original application, because although BC Gas released 2973 $10^3m^3/d$ (105 MMcf/d) of its previously contracted service, it then recontracted this amount for the 15 year period of the Agreement.

Due to the reduced scope of the physical expansion on the northern section of the Mainline, the total cost of the proposed Expansion Project would be reduced. Westcoast stated in the update that the total capital cost of the proposed Project would decrease from approximately $338 million to approximately $270 million, a difference of approximately $68 million. As a result, the estimated demand toll plus motor fuel tax impact would be reduced from 7.7 percent (the 2 January 2002 application) to 5.2 percent (the 15 May 2002 revision). Similarly, the estimated demand toll impact would drop from a 7.0 percent increase to a 4.6 percent increase.

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1 The Agreement filed by Westcoast described the volumes in imperial units. Where only imperial units were provided, the Board has converted from imperial (MMcf/d) to SI measurements ($10^3m^3/d$).

4.5 Views of the Parties

4.5.1 Supply

Ms. Hatch raised a concern about the longevity of the supply. In response, Westcoast pointed out that Ms. Hatch was focussed on proven reserves, however there were other sources of supply yet to be tapped such as the inter-montane basins, coalbed methane and offshore resources.

4.5.2 Markets

BC Gas supported Westcoast's market forecast, stating that it believes that supply and market fundamentals support expansion of pipeline capacity to serve the Lower Mainland and the Pacific Northwest.

Mr. Degan requested clarification regarding the configuration of the North American natural gas market, while several intervenors asked Westcoast to clarify the role of the Huntingdon hub. Westcoast described the North American gas market as integrated and commented that borders do not affect pipelines. The pipeline is physically continuous where it crosses the Canada-US border at the Huntingdon-Sumas hub. Directionally, natural gas flows non-stop from northeast BC south into the US along the Interstate 5 corridor. A nominal change occurs at the border where custody is transferred from Westcoast (the Canadian carrier) to Williams Pipeline (the American carrier and owner of Northwest Pipeline).

Intervenors also raised questions regarding the percentage of gas shipped on the Mainline that is exported to the US market. Westcoast explained that historically exports have averaged approximately 50 percent of the total Mainline volume arriving at Huntingdon, while current exports tend to be approximately 60 percent. The proposed Expansion would increase total volumes by approximately ten percent and the proportion being exported would remain at approximately 60 percent of the total. Westcoast noted that the US Pacific northwest historically anchored the market for Westcoast. This allowed the initial construction of the pipeline in 1957 and facilitated the flow of natural gas to domestic markets in BC.

Ms. Hoekstra pointed out that the Northwest Pipeline expansion appeared to be directly related to the proposed Southern Mainline Expansion as the volume increase of the Northwest Pipeline expansion would be approximately the same as that of the proposed Southern Mainline Expansion. Westcoast explained that the relationship between the proposed Southern Mainline Expansion and the Northwest Pipeline expansion is not a one-to-one relationship. Westcoast noted that Northwest Pipeline would be expanding its takeaway capacity at the Huntingdon-Sumas interconnection point by approximately 6374 $10^3m^3/d$ (225 MMcf/d), with an expected in-service date of June 2003. Presently, the take-away capacity at the international border, which includes Northwest Pipeline, BC Gas, Enco, Arco, and Cascade, exceeds the physical design capacity of the Westcoast system. This situation would not change with the proposed Northwest Pipeline expansion.

Mr. Degan requested clarification from Westcoast regarding the Mainline's status as a monopoly pipeline. Westcoast explained that while the Southern Mainline is essentially the only major pipeline carrying gas to Huntingdon, competition takes place within the pipeline as opposed to the physical infrastructure itself. Westcoast also confirmed for intervenors that future expansions would continue to flow gas through the Southern Mainline to the Huntingdon-Sumas hub according to market demand, as

this was the traditional corridor, configured to best serve the market region. Development of a second hub in another valley would not likely be considered.

Both Ms. Gregorig and Ms. Hatch queried Westcoast regarding its contribution toward the development of alternative power (i.e., renewable energy sources). Westcoast responded that it is focussed on its business as a transportation provider for natural gas, and that relative to other carbon based fuels such as oil and coal, natural gas is a "clean" fuel.

Although Westcoast was not directly cross-examined regarding its market assessment, in final argument, both Mr. Degan and Ms. Gregorig challenged Westcoast's market forecast. Mr. Degan stated that he believed that the demand for electrical generation in the area had decreased significantly. He also stated that due to a downturn in the BC forestry industry, demand for natural gas in BC has subsequently been reduced. Mr. Degan supported his opinions with a number of media reports. Ms. Gregorig remarked that she felt the market did not support the proposed Expansion, as some generating facilities that had been proposed were not being built. Westcoast did not respond to these statements.

The Fraser Valley Regional District (FVRD), whose member municipalities include Abbotsford, Chilliwack, Harrison Hot Springs, Hope, Kent and Mission, expressed concerns relating to the need for the proposed Expansion. The FVRD noted that two proposed pipelines (the proposed Southern Mainline Expansion and the Inland Pacific Connector proposed by BC Gas) were being put forward for the area, although no studies had been conducted to demonstrate domestic need for additional pipeline capacity. Westcoast did not comment on the Inland Pacific Connector proposed by BC Gas.

4.5.3 Transportation Contracts

Mr. Degan stated that he had interpreted the 14 February 2002 BC Gas letter to the Board to mean that BC Gas initially opposed the proposed Expansion application by Westcoast. Westcoast stated that while BC Gas and Westcoast were having ongoing discussions relevant to issues of concern to BC Gas, this did not mean that BC Gas was initially opposed to the proposed Expansion. The Agreement resolved certain outstanding issues between Westcoast and BC Gas concerning the transportation of gas for BC Gas on Westcoast's Southern Mainline from Kingsvale to Huntingdon, BC.

Although he did not have specific proposals, Mr. Degan suggested to Westcoast that it develop co-operative initiatives with its competitors and shippers that would be similar to the Westcoast-BC Gas Agreement. Westcoast stated that the Firm Service Agreements were in response to the current supply-demand situation in the market. Westcoast described its open season process, which is essentially a formal way for shippers and the carrier to cooperatively arrive at an optimum expansion configuration. Westcoast also noted that a Tolls and Tariff Task Force is in place, which allows Westcoast to communicate with customers to deal with operating concerns, ideas, or issues that they have regarding service.

Mr. Degan asked Westcoast whether there would be financial loss incurred by either Westcoast or the Expansion Project shippers if the application was not approved. Westcoast explained that it would not experience a financial loss if the proposed Project was not approved, although the Expansion Project shippers and their customers could experience financial loss in the absence of the proposed Expansion facilities as they would have to find alternate ways to obtain supply, which could translate to cost penalties.

Mr. Degan expressed his belief that the Firm Service Agreements between Westcoast and its shippers placed a tremendous pressure on the Board to approve the application and that executing these contracts in anticipation of the Board's approval is inappropriate business practice. Westcoast did not comment on this statement.

During final argument, Mr. Degan expressed reservations regarding clause 5.05 of the Firm Service Agreements signed by shippers and Westcoast. He stated that this clause allowed shippers a 30-day termination notice period, which would imply the contracts are not "firm", but rather "conditional". Westcoast did not respond to this interpretation.

Views of the Board

The Board notes Westcoast's long-term market assessment covers the 15 year period from 2002 to 2016. The Board is aware that a long-term, forward-looking assessment is an estimate, which indicates a trend. In this case, the trend is for an increasing demand for natural gas over the long-term in the BC and US Pacific Northwest market region. This evidence was not challenged during cross-examination. The media reports cited by Mr. Degan in final argument tended to be short-term in nature. While it may be true that at the time of the Phase II hearing, the BC economy was in a short-term business cycle trough, the Board accepts that the general trend over the long-term is for increasing natural gas demand in the region. The Board agrees that the gas fired power generation industry, which is expected to be a significant driver of natural gas demand in the future, has a lumpy growth profile and that forward planning is necessary to accommodate this growth. As such, the Board understands that a pipeline must take a long-term view of future transportation demands on its system, which includes taking the lumpy nature of the power generation demand profile into consideration.

In response to the FVRD concern that no studies demonstrate a domestic need for additional pipeline capacity, the Board notes that the US Pacific Northwest is recognized as a significant and indivisible part of the market to which the Westcoast system responds. Westcoast has demonstrated an increasing market demand in terms of its entire market region, which is comprised of both the BC natural gas market and the US Pacific Northwest natural gas markets.

The Board accepts that there presently is, and will be, adequate take away capacity at the Canada-US border for the proposed Expansion volumes. The Board notes that the present capacity of the Northwest Pipeline exceeds the physical design capacity of the Westcoast system. Following the Northwest Pipeline expansion, expected to be in service in late 2003, the Northwest pipeline capacity will still exceed the take away capacity of the Westcoast system.

The Board accepts that Westcoast will not construct facilities that are not required due to its inability to recontract the released capacity resulting from the September 2002 contract renewal process. To ensure transparency in this regard, the Board would add a condition to any approval that may be issued to require Westcoast to notify the Board in writing as non-renewed transportation service commencing 1 November 2003 is contracted.

With respect to Mr. Degan's suggestion that Westcoast develop co-operative initiatives with its competitors and shippers to optimize pipeline facilities, the Board agrees that this type of initiative is highly desirable. The Board recognizes the value of the Open Season process and the role of the Tolls and Tariffs Task Force and other similar initiatives in moving toward an optimal pipeline system, and encourages companies to continue developing constructive methods to work toward meeting individual company needs in mutually beneficial ways. The Board notes that the negotiation process has led to a reduction in the size of the expansion of the Southern Mainline from its original design.

The existence of Firm Service Agreements prior to approval of a project does not place any pressure on the Board to approve an application since they are conditional upon the Board approving the project. Rather, contractual commitments are just one of many required components comprising a section 52 application to the Board. In reaching its final Decision, the Board must find an appropriate balance among all of the relevant factors, including, but not limited to, those set out in section 52 of the Act, and must do so on the basis of the evidence before it and within the specific circumstances of each application. Contractual commitments are required by the Board as an indicator that the demand charges will be paid and that there is a need for the facility by shippers. Firm Service Agreements clearly demonstrate that shippers are prepared to pay demand charges.

With respect to Mr. Degan's concern relating to the termination notice period in Clause 5.05 of the Firm Service Agreement, the Board notes that a full reading of the clause reveals that shippers can only terminate the contract in the event that the Board does not approve the rolled-in toll methodology. The Board understands that there are no other provisions in the firm service agreement that allow a shipper to terminate its Firm Service Agreement in the event that the proposed Project is approved and constructed.

Within the context of the Southern Mainline Expansion application, the Board is satisfied that the overall gas supply will be sufficient to sustain reasonable utilization rates of the proposed Expansion. The Board finds that the market forecast and conclusion provided by Westcoast is reasonable and that demand for natural gas in BC and the US Pacific Northwest will continue to grow over the long-term. The Board considers the ten signed long-term Firm Service Agreements, with weighted volume average terms of 27 years, to be strong evidence of the need for the proposed Expansion and assurance that the demand charges will be paid. The fact that ten Expansion Project shippers have committed to pay demand charges for a significant length of time satisfies the Board that the proposed Expansion is likely to be used. In addition, the Board views the fact that no shippers relinquished capacity when given the opportunity during the Open Season as a significant indication that the proposed Expansion is economically feasible.

In summary, the Board is satisfied that Westcoast has demonstrated:

- adequate gas supply to sustain the proposed Project;
- a growing market for the gas to be transported; and
- the existence of long term firm service contracts for transportation on the applied for facilities.

The Board is also satisfied that the demand charges would be paid by Westcoast's shippers.

The Board therefore concludes that the applied for facilities are needed and likely to be used at a reasonable level for the life of the proposed Project.

Given that the applied for facilities are likely to be used and any demand charges would be paid, the Board concludes that the proposed Project is economically feasible.

Chapter 5

Financial Matters, Tolls and Tariffs

Westcoast submitted that the proposed Southern Mainline Expansion would be financed through a combination of internally generated funds, short term financing through the issuance of commercial paper and, if necessary, bank lines and long term debt financing.

Westcoast indicated that proceeding with the proposed Expansion would be conditional on the issuance by the Board of an Order confirming that the rolled-in toll methodology would continue to apply to the Southern Mainline and the proposed Expansion. Westcoast anticipates that the toll impact for the proposed Expansion Project would be approximately 4.6 percent on the demand toll, or 5.2 percent on the demand toll including motor fuel tax. In addition, Westcoast requested that the Board include in any approval, confirmation that the toll for the 2973 $10^3m^3/d$ (105 MMcf/d) of firm service to be provided by Westcoast to BC Gas from Kingsvale to Huntingdon would be the IDA Differential Toll[1], as determined by the Board in RH-2-2001.

Views of the Board

The Board accepts the method of financing the proposed Expansion Project.

Historically, for projects such as the proposed Southern Mainline Expansion, the Board has approved a rolled-in tolling methodology. This has been justified, in part, by the following rationale:

- previous tollpayers have no acquired rights, therefore, they cannot be exempted from a toll increase simply because they have paid tolls in the past;
- when the proposed Expansion facilities are completed, they will become an integral part of the Southern Mainline and will not be associated with, or dedicated to, any individual shipper's gas;
- if the proposed Expansion facilities are constructed, all shippers would benefit; and
- it is the aggregate demand of all shippers that gives rise to the need for additional pipeline capacity.

In addition, in the Westcoast case, revenue requirement is calculated on a rolled-in basis and approved in the Westcoast Settlement Agreement, dated 17 January 2002, regarding negotiated tolls for the Westcoast Mainline system (zones 3 and 4) for the period of 1 January 2002 to 31 December 2003. For these reasons, the Board is satisfied that tolling the applied-for proposed Expansion facilities on a rolled-in basis would be appropriate. Lastly, financing and tolling issues were not raised by the intervenors.

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1 The IDA Differential Toll is the difference between the Station 2 to Huntingdon toll and the Inland Delivery Area toll, which is from Station 2 to just south of Kingsvale.

The Board also agrees that BC Gas should pay the IDA Differential Toll for gas shipped on the 2973 $10^3m^3/d$ (105 MMcf/d) proposed Expansion between Kingsvale and Huntingdon, as determined by the Board in RH-2-2001.

Chapter 6

Environment

6.1 Environmental Screening Process

The Board is a responsible authority under section 5 of the CEA Act for the proposed Project and must conduct an environmental assessment of the proposed Project before irrevocable decisions are made. The Board considered Westcoast's application and noted the nature of the proposed Project, its location, the length of new right-of-way that would be required, and the described potential environmental effects associated with the proposed Project. The Board determined that an environmental screening was required.

In this case, for ease of administration and to avoid duplication, the Board conducted an environmental screening pursuant to section 18 of the CEA Act in conjunction with the hearing process established under the NEB Act. Through the hearing process, members of the public were given notice of the proceeding and were extended an opportunity to either participate in the hearing or file letters of comment. In this case, the public record for the hearing process functioned as the public registry under the CEA Act and collected information relevant to the conduct of the screening.

Throughout the hearing process, all information related to the application, including all environmental information, was available to members of the public through the Board's website and library, in several public libraries located throughout the proposed Project area and from the applicant. In addition, those persons who were granted intervenor status and who participated in the hearing were provided with all information directly. As part of the hearing process, intervenors had the opportunity to ask questions about the evidence on the record, ask questions of Westcoast's witnesses, file evidence of their own and respond to questions on that evidence. They also had an opportunity to present argument to the Board and respond to argument of the Applicant.

The Board prepared a screening report pursuant to section 18 of the CEA Act. In the conduct of the screening and preparation of the screening report the Board considered all of the evidence related to CEA Act matters that was on the public record in the GH-1-2002 proceeding, including information provided by Westcoast and the parties through filed evidence, responses to Information Requests, oral testimony and argument during the hearing process, and received as letters of comment.

The Board has determined, pursuant to the CEA Act, that, taking into account the implementation of Westcoast's proposed mitigative measures and compliance with the Board's regulatory requirements and the conditions attached to the Board's screening report, the proposed Southern Mainline Expansion is not likely to cause significant adverse environmental effects.

In the screening report, the Board identified a number of conditions related to environmental matters that, should a Certificate be issued for the Project, it would recommend be imposed. These conditions are included in Appendix II of these Reasons.

A copy of the screening report was provided to Westcoast and all parties to the proceeding, as well as to interested members of the public and is available through the Board's library.

6.2 Noise

Views of the Parties

Comments regarding noise were provided by participants in the hearing, the public and Health Canada. A detailed discussion of the comments received and the potential effects of the project on noise levels, including any related effects on human health, is provided in section 5.8 of the CEA Act Screening Report.

Westcoast committed to addressing potential noise impacts during construction through routine measures including equipment maintenance, timing of construction and landowner notification. During the operation of CS-2B and CS-5, Westcoast committed to not exceed existing noise levels and, at CS-8B, further reduce noise below existing levels. Westcoast committed to undertake noise surveys once the new compressor units are operational to check the facility noise levels.

In relation to health effects associated with the noise levels proposed for the compressor stations, Health Canada was of the opinion that there would be no effects at CS-2B, negligible effects at CS-5 and what would be classified as a slight noise problem at CS-8B. Health Canada recommended that Westcoast conduct a noise assessment at CS-8B.

The FVRD requested that the Board specify in its decision that noise be reduced to the lowest practical level at CS-8B and that monitoring of noise levels be conducted during the operation of the new compressor and ancillary equipment.

Views of the Board

The Board is satisfied with the information provided and the commitments made by Westcoast in respect of noise associated with the Project. The Board would include in any certificate issued for the Project the conditions proposed in the screening report which are also included in Appendix II of these Reasons. These conditions would ensure that further evaluation of the noise level proposed for CS-8B be carried out, including a validation of the predicted noise levels.

6.3 Air Issues in the Fraser Valley

Views of the Parties

Participants in the hearing process, as well as members of the public, expressed concern with respect to the effect of the proposed facilities on the airshed of the Fraser Valley, an area with impaired air quality. Specific issues included air quality and human health, the release of greenhouse gases, oxides of nitrogen (NO_x) standards in Provincial permits and current initiatives with respect to air quality management.

6.3.1 Air Quality

A detailed discussion of the potential effects of the proposed project on air quality, including related health effects, is provided in sections 5.9 and 5.10 of the CEA Act Screening Report. Project-related effects on air quality would primarily be associated with the operation of the three proposed compressor units at CS-2B, CS-5 and CS-8B. Both nitrogen oxide and nitrogen dioxide, collectively referred to as NO_x are produced during the combustion of natural gas.

The FVRD and members of the public emphasized the need to minimize air pollution in order to protect human health. The FVRD argued that the air quality issues of most concern to it are ozone levels, particulate matter (PM) (both inhalable PM_{10} and fine $PM_{2.5}$ fractions), and greenhouse gases. The FVRD explained that ozone is the major oxidant component of 'photochemical smog', and results from a reaction between NO_x and volatile organic compounds (VOC) in the presence of sunlight and warm temperatures. NO_x also serves as a precursor to the formation of ozone and secondary $PM_{2.5}$.

Westcoast submitted that the compressor units proposed in its Project would result in a reduction of emissions from CS-2B, CS-5, and CS-8B as the units would be more efficient than the units being replaced and would also be equipped with dry low NO_x technology. As a result, the emissions of NO_x and the resulting formation of nitrogen dioxide, ground level ozone and PM associated with the compressor stations would be reduced. Westcoast indicated that, currently, CS-8B operates on average 7 percent of the time with an estimated annual release of 68 tonnes of NO_x. Westcoast predicted that, after the installation of the new compressor, CS-8B would operate at reduced rates 65 percent of the time and would have an estimated annual release of 35 tonnes of NO_x, approximately half of the current releases. Westcoast further submitted that ground level concentrations of nitrogen dioxide, ground level ozone and PM, the pollutants identified as having potential health effects, would be below the Canadian Council of Ministers of the Environment ambient air quality objectives.

6.3.2 Greenhouse Gas Emissions

Carbon dioxide (CO_2), a greenhouse gas, could be released from the proposed facilities through combustion of fuel gas at the proposed compressor units. In addition, methane, also a greenhouse gas, could be released from leaks or by venting natural gas to the atmosphere (blowdowns) during planned and emergency shutdowns.

The FVRD has the authority to engage in air quality planning. The FVRD argued that greenhouse gases were one of the air quality issues of most concern to it and that CO_2, the most prevalent greenhouse gas, would be a product of combustion of the natural gas used to fuel the three proposed compressor units. Both the FVRD and Westcoast noted that methane is 21 times the CO_2 equivalent value as a greenhouse gas. The FVRD was of the opinion that, since methane is a very powerful greenhouse gas, every effort should be made to minimize its release into the air. The FVRD submitted that the volume of methane emissions from Westcoast's pipeline is substantial, particularly through leakage from valves, vents and other equipment.

Westcoast submitted that the dry low NO_x technology used in the new LM2000 compressor units would result in a lower rate of greenhouse gas emissions but estimated an overall increase of 12.7 percent as a result of the increase in pipeline capacity and frequency of use. Reductions in greenhouse gas emissions

could also be realized through reductions in the numbers of blowdowns for maintenance and under emergency conditions (see section 6.3.2.1 below).

6.3.2.1 Blowdowns

Westcoast estimated that after the proposed expansion, CS-2B and CS-5 would experience a decrease in the number of starts and shutdowns per year while CS-8B would likely have one additional start/shutdown per year. Westcoast stated that the decrease is a result of the increased reliability of the new compressor station units. The increase at CS-8B would relate to its higher rate of use (from 7 percent to approximately 65 percent) and greater flexibility during system upsets. Additionally, with the dry gas seal technology, the units would not need to be blowndown if the unit is not operating or if the station piping is blowndown. Westcoast submitted that, due to the installation of the new units at CS-2B, CS-5 and CS-8B, the projected net reduction of blowdown and fugitive emissions (see section 6.3.2.2 below) would represent a total of 194 tonnes of methane annually (4064 tonnes of carbon dioxide equivalent).

Westcoast submitted that planned blowdowns would occur relatively infrequently, and would be minimized by optimizing outages. Westcoast described the technical and economic feasibility of various methods to recover or flare methane during blowdown events, including pulldown compressors and flare stacks. Further, Westcoast indicated that downstream compressors could be used to pull upstream line pressure down to approximately half (approximately 3500 kPa) before venting would initiate.

6.3.2.2 Fugitive Emissions

The FVRD argued that a leak detection and repair program to measure and correct leakage problems should be implemented. Westcoast indicated that it has a greenhouse gas management program, which includes a fugitive gas monitoring program carried out on a five-year cycle. It stated that it has used highly-specialized equipment for the fugitive gas monitoring program and that it is working on fugitive methane identification. Westcoast stated that every year its operations staff perform a survey and would be capable of detecting any large leaks on an ongoing basis. Further, on a 5-year cycle, it tests each facility for leaks and passes the information on to its operations staff for repair or replacement considerations. Westcoast indicated that it maintains an emission inventory for reporting purposes.

Views of the Board

The Board is aware that Westcoast is a participant in the National Action Plan Program on Climate Change and as a registrant in the Climate Change Voluntary Challenge and Registry, it tracks and reports on greenhouse gas emissions and its efforts to reduce emissions.

The Board recognizes the concerns of the public with respect to minimizing project-related emissions of greenhouse gases. The Board notes that the design of Westcoast's proposed equipment would result in a net decrease in fugitive emissions and that monitoring would be carried out. The Board is satisfied that, based on technical and economic considerations, Westcoast's proposed facilities would minimize emissions of NO_x and the resulting formation of nitrogen dioxide, ground level ozone and PM and would minimize the release of greenhouse gases from fugitive emissions and blowdowns. Conditions proposed in the environmental screening report would require Westcoast to

verify its emissions and air quality predictions. These conditions are also listed in of Appendix II of these Reasons.

6.3.3 Permitting Issues

Emissions on the Southern Mainline system, including those from all compressor units, are regulated by the BC Ministry of Water, Lands and Air Protection (BC WLAP). Westcoast stated that a single provincial permit authorizes all discharges to the atmosphere related to its sweet gas transportation system, including total specified annual quantities of particulate matter, sulphur oxides, nitrogen oxides, VOC and carbon monoxide. The permit also specifies total allowable volumes of gas release related to start-up and blowdowns. Westcoast stated that emissions from the proposed compressor units could be accommodated within the existing authorized emission amounts on the permit and, accordingly, there would be no need to amend the permit.

Westcoast's provincial permit requires it to record the volume of gas released from its system, both during routine operation and maintenance and in relation to venting in emergency conditions. This information must be reported to the province on a yearly basis.

In section 5 of its Air Quality Management Plan, the FVRD states that a comprehensive inventory of emissions of air contaminants is a basic tool necessary for the development of an air quality management plan. The FVRD was of the opinion that such an inventory provides information essential for determining appropriate control strategies to attain the objectives of the regulatory agency in meeting established air quality goals.

The FVRD argued that Westcoast's existing emissions permit issued by the BC WLAP is not adequate for the regulation of the pipeline facilities. The FVRD was of the view that more site-specific regulation is needed to ensure that measures are in place to keep emissions to a minimum. It was of the opinion that the existing permitting approach simply authorized system-wide emissions rather than promoting localized control and minimization of emissions. Specifically, the FVRD observed that expanded operation of the Hope (CS-8B) and/or Rosedale compressor stations could occur, generating higher emissions in an already stressed air shed, without violating the permit. The FVRD was of the opinion that site-specific permitting is necessary for effective regulation of large compressor stations, in a manner similar to other large emission sources in the Fraser Valley airshed. While recognizing the provincial responsibility for permitting air emissions, the FVRD requested the Board to recommend more comprehensive permitting. Some intervenors argued that Westcoast's permits should list the emissions from each station, especially those stations that are close to residential areas. Others commented on the ability of Westcoast to amend the provincial permit at will. Westcoast replied that even though there would be reduced emissions of NO_x, no change in the permit would be required.

Views of the Board

The Board recognizes the provincial responsibility to regulate air emissions in BC and considered the concerns and requests of the FVRD and other intervenors.

The Board recognizes the value in verifying the quantity of emissions from specific sources in areas with impaired air quality. This information could be used in the regulation of facilities to verify appropriate operating circumstances. Should a Certificate

be issued for the proposed Project, the Board would impose a condition requiring Westcoast to file with the Board its proposed testing regime for the proposed compressor units with respect to the Emission Testing Priority Index, and its Discharge Monitoring Program for NO_x. Further, Westcoast would be required to file the results of these programs with the Board on an annual basis, including any changes to these programs.

In its CEA Act Screening Report, the Board identified several additional conditions with respect to the verification of actual emission rates and monitoring of air quality in the vicinity of CS-8. Should a Certificate be issued for the proposed Project, it would be subject to these conditions, as well as those identified above. The Board notes that information collected in compliance with these conditions could be made available to others with a responsibility in regional airshed planning and management, as appropriate. Therefore, the FVRD could ask Westcoast, or the Board, for this information.

6.3.4 Canada/US Air Quality Agreement

The FVRD requested that the Board identify an urgent need for the Fraser Valley airshed to be included in the Ozone Annex of the Canada-US Air Quality Agreement (1991). The FVRD was of the opinion that such a designation would ensure that transboundary movement of pollutants in the air shed would be properly assessed and actions developed to ensure that air quality on both sides of the border are protected. The FVRD suggested that an agreement to include the Fraser Valley in this annex should, ideally, be in place prior to approval of any pipeline expansions.

Views of the Board

With respect to the notification requirements under Article V of the Canada/US Air Quality Agreement, the Board has determined that no notification is required, even though CS-8B is located within 100 km of the international border. Notification is required for major modifications of existing facilities within 100 km of the Canada/US border which would result in an increase of 40 or more tonnes per year of one or more common pollutants[1]. The proposed project would not exceed the specified thresholds under Article V of that Agreement.

The Board may, as an independent regulatory tribunal, examine each situation on its facts and determine whether it would be appropriate to follow a particular policy in the circumstances. In this case, the Air Quality Agreement does not apply to the proposed Project. Further, the Board recognizes the mandate of Environment Canada in the administration of this Agreement and notes that Environment Canada did not present comments with respect to the proposed Project. The Board is of the view that, in this case, it is not appropriate to consider or raise, at the time of a regulatory decision, any future modification of government policy or agreements.

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[1] Common pollutants include sulphur dioxide, NO_x, carbon monoxide, total suspended particles and volatile organic compounds.

6.4 Sustainable Development

GSXCCC argued that the Board must consider whether the proposed project makes a positive or a negative contribution toward sustainable development.

Westcoast was of the opinion that sustainable development could be considered in the context of whether a proposed project meets the needs of the present without compromising the ability of future generations to meet their own needs. Further, it submitted that, in considering sustainability, the economic, social and environmental aspects of a project are relevant. Westcoast was of the opinion that its proposed facilities are consistent with this objective of sustainable development and that economic, environmental and overall public need considerations are an integral part of the project review and approval process.

Westcoast's and GSXCCC's views regarding sustainable development revolved around the potential end uses of the gas transported by the proposed Project (see also section 2.1 of these Reasons). GSXCCC submitted that greenhouse gases contribute to global warming which in turn is relevant to sustainable development. GSXCCC argued that the use of natural gas mostly does not displace other fossil fuels; rather it adds to the overall use of fossil fuels by making more fossil fuels available in market areas. This runs directly contrary to the goals of sustainable development.

Views of the Board

The Board, in its decision dated 5 September 2002, determined that the end use of gas is not relevant to its decision under the NEB Act. Further, the Board clarified that, in order to consider environmental effects related to the end use of the gas under CEAA, facilities or undertakings related to the end use of the gas must be part of the project, as scoped. As described in the CEA Act Screening Report, the scope of the project does not include those facilities or undertakings.

The Board is of the view that it included matters relevant to sustainable development in its consideration of Westcoast's application. The Board recognizes that, in general, environmental assessment is an effective means of integrating environmental factors and, as appropriate socio-economic factors, into planning and decision making processes in a manner that promotes sustainable development.

In light of the above, the Board does not give weight to any arguments with respect to sustainable development in relation to end use of the gas.

In conducting its environmental assessment, the Board has considered relevant environmental and socio-economic matters with respect to the Southern Mainline Expansion. Sustainable development, in the context of this project, is inherent in the proposed mitigative measures and recommendations with respect to conditions of approval, which are designed to minimize potential impacts of the project on the environment and socio-economic conditions. In making its regulatory decision, the Board has considered environmental matters, including the information relevant to the conduct of the environmental screening, as well as economic, market and social matters, including any public interest that may be affected.

6.5 Watercourse Crossings

Views of the Parties

Concerns were identified regarding the construction of pipeline crossings of watercourses in general, and specifically with respect to the crossing of the Coquihalla River, in Hope BC. A detailed discussion of the comments received and the potential effects of the project on fish and fish habitat is provided in section 5.7 of the CEAA Screening Report.

Westcoast identified its proposed construction methods for each watercourse, as well as mitigation and general habitat restoration plans. In all cases, watercourse crossings would be constructed using methods to isolate flow from the workspace, effectively limiting the potential for downstream water quality degradation and/or habitat alteration. Temporary structures to allow vehicles and equipment to cross over the watercourses would be designed, installed and removed in accordance with provincial standards. After pipe installation, each channel would be restored and the riparian vegetation at all fish-bearing watercourses would be re-established. The Department of Fisheries and Oceans (DFO) submitted a letter of comment, which identified several recommended mitigative measures to minimize adverse effects on fish and fish habitat. Westcoast indicated that it would implement those measures.

Specific concerns regarding the Coquihalla River were raised by DFO and several hearing participants. The Coquihalla River provides high quality spawning and rearing habitat for several species of salmonids in the vicinity of the proposed crossing location. Further, the river supports a summer run of steelhead trout which spawn upstream of the crossing location. Westcoast acknowledged that the sensitivity of the fish habitat and the size of the river create challenges to pipeline construction. Westcoast prepared and submitted a detailed crossing plan for the crossing of the Coquihalla River, stating that it was discussing the plan with DFO, BC WLAP and the Sto: Lo First Nation.

In its letter of comment, DFO stated that impacts to the river channel and duration of dewatering would likely cause harmful alteration, disruption or destruction of fish habitat and that Westcoast would be required to obtain authorization from DFO to construct the crossing. DFO was very concerned about the implementation of Westcoast's proposed crossing plan during anything other than optimal flow and weather conditions. DFO provided specific comments with respect to maximum flows, the ability of construction activities to respond to increases in flow and downstream turbidity levels.

In response, Westcoast stated that it did not have any concerns with respect to complying with DFO's conditions and recommended mitigation.

Views of the Board

The Board is satisfied that Westcoast has identified appropriate construction methods and mitigation to minimize adverse effects on the watercourses along its proposed loops. In its screening report, the Board identified several conditions with respect to the protection of fish and fish habitat. Should a Certificate be issued for the proposed Project the Board would impose these conditions, which are included in Appendix II of these Reasons.

With respect to the Coquihalla River crossing, the Board notes Westcoast's indication that it would comply with DFO's conditions and recommended mitigation. The Board is of the view that, with proper implementation and construction monitoring, Westcoast's proposed isolated crossing method for the Coquihalla River would, to the extent possible, minimize direct and indirect habitat alteration. The Board notes that Westcoast continues to finalize its crossing plan for the Coquihalla River and would continue its discussions with DFO and others. As described in section 5.7 of the screening report, Westcoast would be required to file with the Board, for approval, its final crossing plan prior to beginning construction of the Hope Loop.

Chapter 7

Socio-Economic, Public Consultation, Routing and Land Matters

7.1 Socio-Economic Matters

Views of Westcoast

Westcoast stated that the proposed Project will generate employment and other business opportunities in a number of rural areas of BC during construction. Westcoast estimated that up to $6.9 million in employment income and up to $8.2 million in non-resident worker and contractor spending on materials and supplies will accrue to communities in the study areas along the proposed Project route. Also, during operation, the proposed Project will generate almost $1.6 million annually in additional property taxes for local and provincial governments.

Westcoast has a policy of encouraging and supporting local employment and business opportunities resulting from construction, including 'set asides' for First Nations. Westcoast is assembling registries of local aboriginal and non-aboriginal business workers interested in providing work and services to the proposed Project for the use of the prime contractor.

Westcoast stated there will be considerable demand for short-term accommodation and food services for construction workers in the McLeod Lake area, the Alexandria loop area and the City of Williams Lake, as construction activities will compete with peak tourist season. To mitigate these impacts, Westcoast stated it will adjust the timing of individual segments of the proposed Project north of Prince George and hire an accommodation co-ordinator to manage requirements and demands on community services in these three areas.

Westcoast identified that increased traffic during construction, especially in the residential areas near the 150 Mile House, Hope and Rosedale loops will negatively impact local residents and communities. To mitigate these impacts, Westcoast has stated workers will be transported to construction sites by bus and a formal traffic management and safety plan for residential areas near the 150 Mile House, Hope and Rosedale loops will be developed and filed with the Board prior to construction. Westcoast has also committed to communicate this plan to residents either individually or at an Open House. The purpose of the plan will be to address efficiencies of vehicular/equipment mobilization and other means to minimize the impacts of traffic on these residential areas.

Views of the Intervenors

In written evidence and letters of comment, some residents expressed concern about the noise and disruption to their daily lives and small business operations that will result from certain construction activities and requested they be notified of such activities in advance. Westcoast responded by stating that a detailed schedule will be prepared no later than two months after the construction contract has been awarded and, once this schedule is available, Westcoast staff will discuss it with each individual

landowner. Additionally, in the Environmental Protection and Reclamation Plan dated 27 August 2002, Westcoast outlined how and when it will notify concerned parties prior to construction to ensure that interferences with other land uses is minimized. Ms. Hoekstra proposed that in order to address the concerns expressed by several landowners who wrote letters of comment to the Board, the Board should require Westcoast to provide its construction schedule to affected landowners at least 30 days prior to commencement of construction activities.

In their written evidence, the Cheam Indian Band (Cheam) stated that the pipeline crosses their reserve lands, traditional territory and also directly past a residential section of their community. As a result, the proposed expansion would result in more permanent loss to Cheam lands which are both prime and scarce. They noted that the existing pipeline makes much of their lands useless for traditional, medicinal, recreational, spiritual and commercial purposes and the expansion would make this situation worse.

The Cheam also stated that their members make their livelihood from the Fraser River and they are concerned about the pipeline's effects on the fish, fish habitat and the overall health of the river. They also stated that the pipeline is inherently dangerous and poses a risk of environmental disaster if a failure were to occur.

The Cheam stated that a fiduciary duty is owed to them and that the federal government, the provincial government and the NEB are not exercising that duty. Additionally, the Cheam stated there is a duty to consult wherever aboriginal rights and title could be affected and their rights and title are being compromised and put in jeopardy through the process brought about by the proposed Project. The Cheam stated that the degree of infringement of their aboriginal title that would result from this project makes it necessary for the Cheam to consent to the project before it can proceed. Finally, the Cheam demanded a share of the wealth from the resources of their lands and stated that they intend to ensure that they are properly compensated for all lands.

Westcoast submitted that it has endeavored to respond to questions and issues raised by the Cheam during the course of their discussions. Additionally, Westcoast stated it is hopeful that negotiations with the Cheam regarding the terms and conditions for the acquisition of the required lands can be completed soon but should it be necessary, temporary measures will be considered. Westcoast also stated that, although it is not its preferred course of action, construction of any expansion facilities will not proceed on the reserve in the event an agreement cannot be reached with the Cheam.

Views of the Board

The Board notes Ms. Hoekstra's suggestion that Westcoast should provide its construction schedule to affected landowners at least 30 days prior to commencement of construction. The Board finds this reasonable and will impose a condition in any certificate that may be issued requiring that, at least 30 days prior to commencement of construction, Westcoast shall file with the Board and provide to affected landowners a detailed construction schedule. Additionally, Westcoast shall notify the Board and any affected landowner of any modifications to the schedule as they occur.

The Board notes that, although Westcoast's existing Southern Mainline passes through the Cheam Indian Reserve, the expansion project is limited to an additional 20 metres of right-of-way over a distance of approximately 190 metres on reserve lands for a section of the Rosedale loop and associated pigging facilities. The Board notes that some of the

issues raised by the Cheam in their evidence relate to concerns about the existing Southern Mainline system. These issues are beyond the scope of the applied for project and can not therefore be addressed as part of this proceeding.

With respect to the Cheam's comments regarding compensation for the use of reserve lands, the Board notes that Westcoast and the Cheam are continuing to discuss the terms and conditions for the required reserve lands and that Westcoast must acquire the rights to enter Cheam lands prior to commencing construction.

The balance of the Rosedale loop is either on private agricultural land or on road allowances. The Board notes that the Traditional Land Use Study prepared by the Sto: Lo Nation for the Rosedale loop did not identify any traditional use sites or current use of the proposed right-of-way for traditional use activities.

The Cheam have stated that their rights are such that it is necessary for the Cheam to consent to the project. Westcoast has acknowledged that it must negotiate an agreement with the Cheam for the use of the portion of their reserve lands that is required for the Rosedale loop and they have committed to do so. In the event that they are not able to reach an agreement prior to construction, Westcoast has indicated that it will proceed without using the Cheam reserve land until such agreement is reached. There is no evidence before the Board that any other rights of the Cheam are affected by the balance of the Expansion Project.

The Board notes that Westcoast initiated its discussions about the project with the Cheam in September 2001. Westcoast stated there were a total of 12 further meetings or phone calls between the Cheam and Westcoast up until the time of the hearing. The purpose of these discussions was to provide information about the project, address any concerns raised and collect information about the traditional land use and heritage resources studies. At the hearing, Westcoast stated that at no time during these discussions did the Cheam express concerns that the proposed project might impact on their Aboriginal rights.

The Board is satisfied that the proposed Project will provide benefits to the local and regional economies and labour forces and that Westcoast has measures in place to mitigate the adverse socio-economic impacts which are expected to arise.

7.2 Public Consultation

7.2.1 Early Public Notification

Part II of the Board's Guidelines set out the requirements for conducting an Early Public Notification (EPN) program and the information to be filed with the Board by an applicant for a Certificate pursuant to sections 52 of the Act. The Guidelines require that, prior to filing an application with the Board, an applicant shall:

- implement an EPN program that provides sufficient information to the public such that the potentially adverse environmental and socio-economic effects of the proposed Project can be identified;

- allow an opportunity and adequate time for the public to comment on the proposed Project;
- respond to any relevant questions;
- provide interested persons with information regarding Board procedures for examining the application and the Board's address for obtaining information and expressing concerns directly to the Board; and
- if changes to the proposed Project occur, the applicant shall initiate a public notification program with regard to any persons who would be affected by the changes.

The Guidelines further require that an application filed with the Board shall describe the public information program conducted by the applicant, including but not limited to:

- the means and dates of public notification and the dates and locations of any meetings;
- a summary of the comments received and concerns expressed regarding the potentially adverse environmental and socio-economic effects of the proposed Project; and
- a summary of the applicant's responses to the public including the measures the applicant has taken or plans to undertake to resolve the concern(s), or an explanation why the applicant considers no further action is necessary to address the concern(s).

Views of Westcoast

In the application filed on 2 January 2002, Westcoast stated that its EPN program for the proposed Southern Mainline Expansion began in September of 2001. It stated that the overall goal of the EPN program was to ensure that stakeholders understood the proposed Project, related issues and potential impacts of the proposed Project, and to understand how those issues and impacts would be resolved or mitigated.

The initial phase of the EPN program focussed on presenting the proposed Project to stakeholders, including regulatory and government agencies, landowners, First Nations, local and regional communities and residents local to the proposed Project. Westcoast's EPN program included:

- placing advertisements and maps in newspapers local to the proposed Project area for several publication run dates during September and October of 2001. The newspaper advertisements included the invitation for the public to attend open houses to be conducted at several locations along the proposed Project route;
- a Canada Post mail drop of 18,699 proposed Project information postcards in the communities of McLeod Lake, Quesnel, 150 Mile House, Savona, Logan Lake, Hope, Rosedale and Chilliwack;
- public open house meetings held in the communities of 108 Mile Ranch, McLeod Lake, Summit Lake, Prince George, Quesnel, 150 Mile House, Savona, Hope and Chilliwack;
- landowner open house meetings held in the communities of Quesnel, 150 Mile House, Hope and Chilliwack;
- letters, questionnaires, fact sheets and return self addressed envelopes mailed to residents of Lone Butte because of zero attendance at the open house meeting;
- distribution of proposed Project information at the open house meetings;
- telephone and e-mail communications with stakeholders;
- assignment of four Westcoast Land and Community Coordinators to maintain contact with stakeholders throughout the course of the proposed Project;

- a web page containing proposed Project information and updates, and which was promoted through advertisements, factsheets and open house meetings; and
- proposed Project postcards and letters sent to directly affected landowners, trapline licence holders and guide outfitters.

On 28 February 2002 Westcoast advised the Board that since the filing of the application it had continued to consult with stakeholders to the proposed Project. As most of the discussions with stakeholders were ongoing, the resolution of some issues and concerns of the stakeholders had not been finalized. Westcoast committed to continue to consult with all interested parties and to work towards resolving any outstanding concerns. It provided an issues resolution table that described all issues or concerns raised by stakeholders through Westcoast's EPN program and the mitigation proposed to address the issue or concern.

On 29 August 2002 in response to Board information request 6.16, Westcoast stated that since the filing of its amended application on 15 May 2002, it had continued its public consultation activities. These activities included:

- the development of new proposed Project materials that explained the change in the proposed Project scale as a result of the agreement reached between Westcoast and BC Gas;
- a letter of notification delivered via postal drop to residences and businesses located in Lone Butte and Savona to notify parties of Westcoast's decision to cancel these loops from the proposed Project;
- community barbeques held in Hope and Alexandria for affected landowners;
- a presentation to the Prince George Chamber of Commerce;
- community newsletters explaining the reduction in scale of the proposed Project delivered via postal drop to all homes and businesses located along the route of the proposed Project; and
- delivery of proposed Project materials through meetings and mail to all government agencies previously consulted on the original application.

Westcoast stated that numerous questions and issues were raised by stakeholders through the EPN program. The questions and issues fell under five broad categories:

- environmental - impacts to fish, fish habitat, plants, soils, wildlife and species of concern;
- land use - impacts and disruption to local commercial and forestry activities, recreation activities, roadways and farming activities;
- safety concerns due to increased vehicle traffic during pipeline construction;
- economic and employment opportunities and local tax issues; and
- potential noise impacts.

Westcoast outlined the specific mitigation it proposed to implement in order to address each of the issues and concerns raised by stakeholders. Westcoast stated that its public consultation activities would continue throughout development of the proposed Project in order that issues are addressed and resolved, and that all stakeholders are informed respecting any developments or changes to the proposed Southern Mainline Expansion.

In response to questions at the hearing, Westcoast provided additional information on its EPN policies and procedures. It stated that in 1996 the company reorganized its consultation program to provide for Westcoast community coordinators to be located on a permanent basis in various communities along the Southern Mainline. This would allow Westcoast to respond to community and landowner issues locally as they occur, rather than the Company sending personnel from Vancouver, Fort St. John or Prince George. Westcoast stated that when it proposes facilities projects such as the proposed Southern Mainline Expansion, it supplements the community coordinators with additional people to help with the significant number of additional landowner contacts, land acquisition and notification matters. Westcoast stated that at the time of the hearing it employed up to 17 or 18 staff located along the Southern Mainline dedicated to consultation activities for the proposed Expansion Project. The focus of their work is to ensure that Westcoast meets and exceeds the guidelines for consultation related issues.

Westcoast did not include the residents in the City of Abbotsford or surrounding area in its EPN program because there would not be any significant construction, additional compression or additional lands required at the Huntingdon meter station. It believed that there would not be any significant effects on residents near the Huntingdon meter station or residents within the City of Abbotsford as a result of the construction and operation of the proposed Expansion Project.

Views of the Intervenors

Although the intervenors did not express concerns regarding the design or implementation of Westcoast's EPN program for the proposed Southern Mainline Expansion, several intervenors stated that Westcoast had not satisfactorily addressed specific issues and concerns raised by the public.

Several intervenors from the Fraser Valley area stated that Westcoast failed to recognize the level of concern they felt over the proposed Project and it did not include them in the EPN program. Ms. Hoekstra questioned Westcoast as to why it chose not to conduct open house meetings in Abbotsford when the proposed Expansion gas would be transported through the Huntingdon hub near Abbotsford. Ms. Hoekstra said that Westcoast should take a proactive approach to letting the public know about incidents and ongoing operations that may affect the public. Mr. Peachy proposed that a notification program be required in the event that Westcoast proposes to provide natural gas transportation service to the proposed SE2 (Sumas Energy 2, Inc.) plant or to any other proposed electrical generation plant located within 50 km of the US/Canada international boundary.

Views of the Board

The Board has considered the EPN program implemented by Westcoast for the proposed Southern Mainline Expansion. The Board notes some shortcomings in regard to Westcoast's First Nation consultation activities. These are discussed in section 7.2.2 below.

The Board also notes the dissatisfaction expressed by several intervenors respecting Westcoast's response to their specific issues. The issues resolution tables provided by Westcoast in its application and in response to information requests do not indicate whether or not the stakeholders contacted were satisfied with the resolutions. Although the Board does not expect that the parties will be able to resolve all issues and concerns, the Board expects Westcoast to be clear on the issues and concerns that remain to be resolved, the measures Westcoast has taken or intends to take to resolve the concerns or,

to provide an explanation of why Westcoast considers no further action is required to address the concern(s).

The Board notes the general concern expressed by some intervenors that Westcoast's EPN program was not inclusive and responsive to public needs. The Board particularly notes the views expressed by intervenors that an EPN program should be required in the event that Westcoast files an application for transportation facilities to serve electrical generation plants such as the proposed SE2 project. This matter is discussed in greater detail in section 8.1 of these Reasons.

7.2.2 Westcoast's Consultation With First Nations

Views of Westcoast

Initially Westcoast identified 21 First Nations who might reasonably be considered to have interests which might be affected by the proposed Project. Westcoast noted that, due to the reduced scale of the proposed Project, the number of First Nations who may be impacted by the proposed Project was changed to 12 . Westcoast's consultation activities focused on these 12 First Nations. Westcoast stated that the objectives of its consultation were to update the First Nations on the proposed Project, seek information about their concerns, address concerns, seek their participation in the collection of traditional use and heritage resources information and to build trust and confidence.

Westcoast initiated its consultation with some First Nations in September 2001. However, based on the information filed by Westcoast not all potentially affected First Nations were contacted about the proposed Project until March 2002. In the original application, Westcoast identified the following as general issues of concern which were raised by First Nations prior to the filing of the application:

- restricted access to hunting and fishing areas;
- employment and products/service support opportunities;
- safety of cattle in the right-of-way;
- historical Westcoast issues and concerns;
- gas fumes effects; and
- benefits to the community.

Westcoast described that other concerns raised by First Nations included safety and emergency response, and the use of herbicides and pesticides on the right-of-way.

The majority of Westcoast's consultation efforts with First Nations in general focused on the collection of information for the Traditional Land Use Study (TLUS). Westcoast submitted that it would provide to those First Nations who participated in the TLUS, a copy of the draft TLUS for review and comment. After any comments are received, Westcoast would file the final TLUS with the Board.

In addition, Westcoast discussed specifically with the Cheam the acquisition of new permanent right-of-way on the Cheam Reserve lands downstream from CS-9 for pipe and pigging facilities associated with the Rosedale loop.

Views of the Intervenors

In its submission during the hearing, the Cheam raised, among other issues, questions regarding the health effects, discomfort and property damage caused by venting, emissions and/or escape of toxic gases from the pipeline and compressor station and the procedure to be followed when artifacts are recovered by Westcoast staff.

In their written evidence, the Cheam raised concerns about Westcoast's consultation with them about the project, specifically that they did not have sufficient financial or human resources to review the application in the time allowed and that they should have been consulted earlier in the process. Additionally, in their evidence the Cheam asked Westcoast some questions about the training and knowledge of Westcoast staff about consultation with aboriginal peoples and if there is a minimum standard to determine if sufficient consultation has taken place.

In response to concerns raised by the Cheam, Westcoast stated that staff who consult with aboriginal peoples are trained in accordance with the Company's consultation objective (summarized in 7.2.1). Additionally, Westcoast stated that although there is no minimum standard to determine if sufficient consultation has taken place, they are prepared to engage in consultation with potentially affected aboriginal people as often as the aboriginal people desire to consult about the project. The amount of consultation is generally a function of the potential impacts of a particular project.

In its evidence, the McLeod Lake Indian Band submitted that since approximately 26 km of the existing Westcoast Mainline system and CS-3 are located in close proximity to their reserve lands, the Band has developed over many years a beneficial long-term relationship with Westcoast. The Band noted that they had been kept appraised of the proposed Project and participated in discussions to ensure their interests and concerns were communicated and respected. Additionally, the McLeod Lake Indian Band has been accepted as a qualified bidder for work that will be available for First Nation communities and contractors on this proposed Project and have benefited from training sessions offered by Westcoast. Finally, the McLeod Lake Indian Band stated that they endorse and support the proposed Project as Westcoast is a company of high integrity who respects the interests of First Nations peoples in their operational activities and stewardship responsibilities.

The McLeod Lake Indian Band requested that the use of herbicides and pesticides be avoided as a vegetation management treatment on the right-of-way within their territory. They suggested that appropriate vegetation such as alfalfa be used to cover the area.

Views of the Board

The Board's Early Public Notification requirements as stated in Part II of the Guidelines are as follows:

> 3. With respect to early public notification, the application shall include evidence to show that there has been meaningful public input at a local and regional level during the planning and design phase of the proposed Project

(a) to ensure that those who may be affected by the proposed Project

i) are made aware of the proposed Project as early as possible, and

ii) are given an opportunity to express their views to the application in advance of the application

(b) in order that public concerns are addressed in the application.

The Board notes that Westcoast initiated its contact with some First Nations in advance of the filing of the application with the Board. However, there were a number of First Nations who were not contacted until after the application was filed. Accordingly, the Board initiated an information request process to ensure that all First Nations were contacted. Subsequently, Westcoast informed the Board that it had contacted all potentially affected First Nations. The Board encourages Westcoast to ensure that, in the future, all potentially affected First Nations are contacted early in the process in accordance with the Guidelines.

The Board notes that First Nations which may be affected by the proposed Project had several opportunities and ways of providing any information, comments and views that they wished the Board to consider during the conduct of the hearing. The hearing process provided participants with the opportunity to ask questions about the evidence on the record, file evidence of their own and respond to questions on that evidence. They also had an opportunity to present argument to the Board, respond to argument of Westcoast and to comment on potential conditions of approval. At the beginning of the hearing process, the Board offered information sessions to all potentially affected First Nations to help them understand the steps and processes that occur during the Board's public hearings. To further assist participants, additional information sessions were held at the beginning of the public hearings held in Chilliwack and Williams Lake, BC.

The Board is of the view that its hearing process provided an open, transparent and accessible forum for any First Nation to bring forward any issues or concerns with respect to the proposed Project.

The Board also notes that, at the request of the CTC, additional time was provided to the CTC to submit information and that its concerns were resolved during the hearing process.

In addition, the Board recognizes Westcoast's own consultation process with the First Nations that could be affected by its proposed Project. Several First Nations participated in the conduct of the TLUS, including both providing and collecting information and traditional knowledge, as well as identifying mitigative measures. The Board notes that Westcoast is continuing the collection and integration of relevant information from First Nations into its project planning for both the construction and operation phases, including scheduling and mitigation.

The Board further notes that, during the hearing, Westcoast committed to provide draft copies of the TLUS to the First Nations who participated in the studies, for their comment. The Board notes that some of the First Nations who participated in the TLUS were not intervenors in the GH-1-2002 proceeding and would not receive a copy of the TLUS as directed in the Board's letter of 12 December 2002. Further, the final TLUS that was filed by Westcoast did not indicate that the draft studies had been provided to the participating First Nations and that any comments had been incorporated. In this regard the Board would impose a condition on any approval that may be granted to require that for each pipeline loop, Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of that loop, or as otherwise directed by the Board, its final mitigative measures with respect to potential impacts of that pipeline loop on the use of lands and resources for traditional purposes by aboriginal persons. In its filing for each pipeline loop, Westcoast shall provide evidence with respect to the opportunities provided to participants in the Traditional Land Use Study to comment on the draft Traditional Land Use Study report and the mitigative measures for that pipeline loop, and shall provide any comments received.

7.3 Routing and Lands

7.3.1 Route Selection Process for the Pipeline Loops

Views of Westcoast

In its Environmental Impact Assessment (EIA), Westcoast described that the overall intent of the route selection process for the proposed loops was to minimize new land disturbance, avoid environmentally sensitive areas, maximize operational efficiency and minimize costs. Westcoast assessed the potential routing constraints for the proposed looping of the Southern Mainline and concluded that its goals would be accomplished by routing the pipeline loops within or adjacent to the existing pipeline right-of-ways.

In its application filed on 2 January 2002, Westcoast stated that in addition to meeting the goals described in its EIA, the selection of the route of the proposed Southern Mainline Expansion looping was based on several factors:

- locating the pipeline loops adjacent to the existing pipeline right-of-way minimizes the length of new pipeline required which increases hydraulic efficiency and minimizes design and construction costs;
- using a portion of the existing right-of-way for access and construction would minimize the amount of clearing and development of new right-of-way;
- locating the proposed loops adjacent to the existing pipeline right-of-way maintains operational efficiency for surveillance and maintenance of the pipeline; and
- locating the proposed loops adjacent to the existing pipeline right-of-way reduces the risk of encountering unknown engineering, geotechnical and construction problems because conditions along the existing right-of-way are well understood.

Westcoast stated that no significant constraints existed and no deviations from the existing right-of-way are required for most of the proposed loops however, because of potential land use conflicts and constraints, it considered alternative routes for the 150 Mile House loop and the Hope loop.

Four routing alternatives were considered for the 150 Mile House loop in the first 3.8 kms of the route that passes through a developed area near 150 Mile House. After extensive field reconnaissance and consultation with affected landowners, Westcoast selected the preferred route adjacent to the east side of the existing right-of-way and with no diversions away from the existing right-of-way. This route alternative was selected because it had the least overall impact on landowner properties.

Westcoast stated that, except for a 1.8 km section, the 11.3 km Hope loop would be installed within the existing right-of-way, parallel to the existing 914 mm OD pipeline, and will replace the existing 762 mm pipeline. Of the 1.8 km section, 1.65 km would be installed in a new right-of-way alongside and contiguous to existing rights-of-way owned by TELUS, British Columbia Hydro and Power Authority, TransMountain Pipeline Company Ltd. and the BC Ministry of Highways. The remaining 150 metres of pipeline loop would be installed in a new right-of-way not adjacent to any existing right-of-way. The proposed route would require the purchase of some property and homes along the route in the City of Hope where construction activities would require additional temporary work space currently occupied by houses.

In its application, Westcoast described that it considered two possible alternative routes for the Hope loop. The first alternative was to install the Hope loop in a new right-of-way adjacent to the existing right-of-way, as opposed to within the existing right-of-way. It identified several problems with this alternative:

- existing residential housing is located adjacent to the existing right-of-way and future residential development may occur close to the right-of-way;
- the new TransCanada Highway is located directly over the existing pipelines in some locations;
- other utilities are located directly adjacent to the existing right-of-way;
- terrain conditions adjacent to the existing right-of-way present construction challenges; and
- potential environmental impacts associated with a new right-of-way.

The second alternative route was to seek a new corridor for the Hope loop that would bypass much of the urbanized areas of the City of Hope. Westcoast examined a potential route that follows existing powerlines as much as possible however, it identified several problems with this route:

- existing and potential residential development within the City of Hope limits the selection of a corridor;
- a new corridor presents very challenging terrain and construction conditions;
- difficulties finding suitable crossing locations for the Coquihalla River and the TransCanada Highway; and
- the increased potential for adverse environmental impacts with a new corridor.

The proposed route for the Hope loop presented advantages to the two alternative routes:

- it maximizes the use of existing right-of-way;
- it minimizes potential impacts on existing and potential future residential development;
- it provides an acceptable crossing location of the Coquihalla River; and
- it minimizes potential environmental impacts.

In response to questions at the hearing Westcoast stated that it examined an additional alternative route for the Hope loop. This route would be located on the north side of the City of Hope, below Mount Ogilvie (Mount Ogilvie route). The proposed route and the Mount Ogilvie route are shown in Figure 7-1. Westcoast discounted the Mount Ogilvie route because it would require a crossing of the Fraser River and would require approximately 27 hectares of new permanent right-of-way as opposed to five hectares of right-of-way for the proposed route. Its greatest concern with the alternative route was that it believed there would be a very low probability of successful crossing of the Fraser River. Westcoast stated that it also wished to respect the desires of the people in Hope not to take any more of their land.

Views of the Intervenors

The intervenors did not express concern for the route selection process or the proposed routes of most of the pipeline loops for the proposed Southern Mainline Expansion. However, concerns were expressed respecting the proposed route of the Hope loop. Ms. Horsfield and the Hope Ratepayers' Association (Hope Ratepayers) suggested that the proposed alternative route for the Hope loop on the north side of the City of Hope that traverses the north side of Kawkawa Lake below Mount Ogilvie, is preferred over Westcoast's proposed route. They stated that this alternative route would be much safer and less intrusive to the residents of Hope. They stated that if the route below Mount Ogilvie was never a viable alternative to Westcoast because of cost, it should not have been presented as an alternative. Ms. Horsfield stated that it was misleading and unfair to the people of Hope to let them believe this alternative was a real possibility.

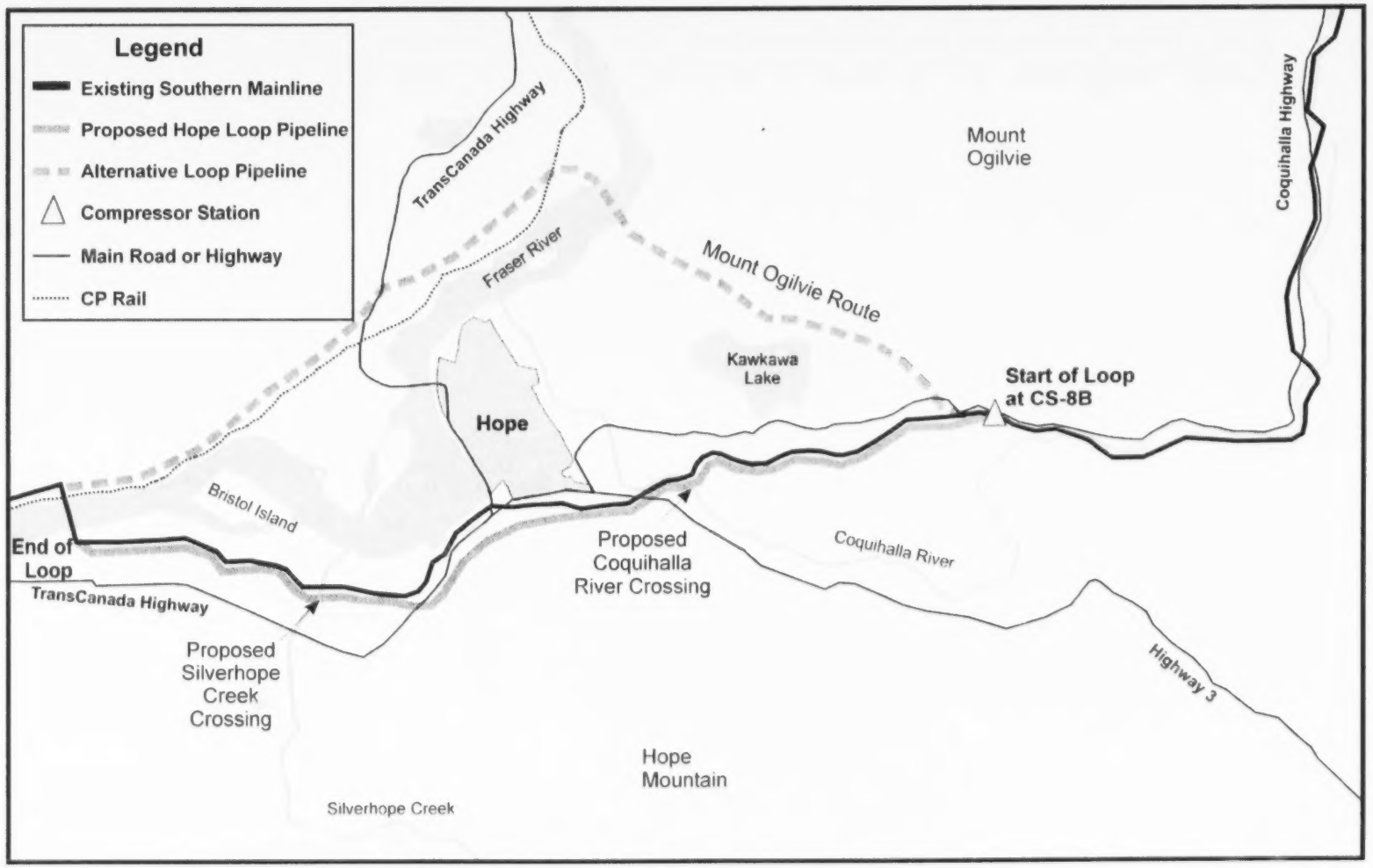
7.3.2 Site Selection Process for the Proposed Compressors and Meter Station Upgrades

Westcoast stated that locating the proposed compressors at existing compressor stations is the most operationally, economically and environmentally favourable option. It proposed to install one new compressor unit at each of stations CS-2B, CS-5 and CS-8B. The new compressors would be installed entirely within the existing station lands and no additional clearing or land disturbance would be required. The meter station upgrades at Station MS-16 at Huntingdon would be installed entirely within the existing station lands and no additional clearing or land disturbance would be required.

Views of the Board

The Board accepts the criteria used by Westcoast for its route and site selection process. The Board also accepts that, in principle, the preferred routing for new pipeline looping is either within or directly adjacent to an existing pipeline right-of-way or other existing linear corridor. The exception to this principle is where areal or environmental constraints are such that the cumulative adverse effects of additional looping adjacent to an existing right-of-way or corridor would be greater than the potential adverse effects of a new right-of-way. The Board notes that the pipeline looping for most of the proposed Project is within or adjacent to existing right-of-way except for portions where land use or environmental constraints prevent a route within or adjacent to the existing right-of-way.

Figure 7-1
Westcoast Energy Inc.
Proposed Hope Loop Pipeline



The Board notes that most of the proposed Hope loop would be installed within the existing right-of-way and would require five hectares of additional permanent right-of-way. The Board accepts that deviations from the existing right-of-way for portions of the Hope loop are necessary in order to address land use and environmental constraints. The Board does not consider the Mount Ogilvie route to be a viable alternative route because of the low probability of a successful horizontal directional drill for the crossing of the Fraser River, the greater land requirements than the proposed route and the potential slope instability issues along this route. The Board accepts that the proposed route presents the most viable option for the Hope loop.

The Board has considered the appropriateness of the route and site selection process described by Westcoast in its application and as adduced in evidence at the hearing. The Board is satisfied that Westcoast's route selection process is appropriate for the proposed Southern Mainline Expansion looping. The Board is also satisfied that the site selection process for the new compressors and meter station upgrades is appropriate.

7.3.3 Land Requirements and Acquisition

Views of Westcoast

Westcoast proposed to acquire an additional 18 to 24 metres of right-of-way for the proposed loops. Additional temporary work space would also be required at the crossing locations of streams, roads and other utilities. Westcoast would not require any additional lands for the installation of the proposed compressor units at CS-2B, CS-5 and CS-8B or for the proposed station modifications at the Huntingdon Meter Station.

At the hearing, Westcoast confirmed that all the affected landowners along the proposed routes of the pipeline looping have received section 87(1) notices as well as temporary work space notifications. Westcoast filed a sample copy of its section 87(1) notice that it served on landowners. The sample copy of the section 87(1) contained the required information as set out under section 87(1) of the Act. This includes the following:

- a description of the lands of the owner that are required by Westcoast for that section or part of the pipeline looping;
- the details of compensation offered by Westcoast for the lands required;
- a detailed statement of the value of the lands required for which compensation is offered;
- a description of the procedure for approval of the detailed route of the pipeline; and
- a description of the procedure available for negotiation and arbitration in the event that the owner of the lands and the company are unable to agree on any matter respecting the compensation payable.

Westcoast stated that with respect to the Hope loop, it would purchase some properties in the area of Robertson Crescent. It requires additional lands because the existing right-of-way in some areas is narrow, some residences have been constructed near the edge of the right-of-way and it requires additional work space for construction activities.

In response to questions posed at the hearing, Westcoast described the land tenure system in BC and the manner in which certain developments are allowed to be built close to each other. It stated that

developments such as pipelines and utilities require that an easement agreement be in place with the surface owner and the easement must be registered on title at the local land titles office. The easement sets out certain restrictions for use of the right-of-way area such that the pipeline and the public are protected. The easement will normally prevent most developments from occurring within the boundaries of the right-of-way. Therefore residential development cannot occur within the right-of-way. Westcoast stated that there are no residences existing within the boundaries of the right-of-way of the Southern Mainline.

Westcoast stated that at the time of the hearing, it was in negotiations with the Cheam for the acquisition of approximately 190 metres of right-of-way downstream of Station 9 for the Rosedale loop. It hoped to reach an agreement with the Cheam by late fall 2002, however, if an agreement is not prior to construction, it would not construct any pipeline loop on the Cheam lands but would commence the loop downstream of the Cheam lands. It stated that the loop would have sufficient hydraulic capability to accommodate all the proposed Expansion volumes without the segment on the Cheam lands. Westcoast indicated it would consider this option to be a temporary measure and would install a temporary crossing downstream of the Cheam lands from the existing mainline to the proposed loop. However, Westcoast indicated that the reserve lands downstream from the compressor station would be required to install pigging facilities to accept the in-line inspection tools. Westcoast has initially designed all of the proposed loops in order to accommodate in-line inspection tools to maintain the pipeline integrity as stated in section 3.3.3.

Views of the Intervenors

The intervenors did not dispute the proposed land requirements for the proposed Southern Mainline Expansion although some expressed concerns that the extra lands required for the pipeline looping through the City of Hope would conflict with existing residences and any future residential development. Ms. Gregorig stated that the whole of Robertson Crescent in the City of Hope should be purchased by Westcoast and evacuated because the present pipeline is so close to the residences that exist on that Crescent. She stated that the installation of the new pipeline in this right-of-way would present a greater danger to the residents of those houses. Ms. Gregorig and the Hope Ratepayers expressed concern for the manner in which pipelines and residences are allowed to be developed in close proximity to each other. Mr Bray expressed concern that the land acquisition process was not sensitive to those landowners who may not have the resources or ability to understand the land acquisition process.

Views of the Board

The Board accepts that the width of the right-of-way as proposed by Westcoast is appropriate for the size of the pipe proposed to be installed and would contribute to safe conditions and environmental protection during construction of the Proposed Project.

The Board notes that section 87(2) of the Act specifies that where a land acquisition agreement between a pipeline company and a landowner is entered into before the section 87(1) notice is served on the landowner, that agreement is void. This is the only timing constraint set out by the Act for the service of section 87(1) notice, otherwise a pipeline company can serve the notice on landowners at any time during the course of the Board's regulatory process, including after the Board renders a decision on a

proposed Project. Once the notice is served, the pipeline company can enter into a lands acquisition agreement with a landowner.

The Board notes that Westcoast endeavoured to serve the section 87(1) notice on landowners prior to the commencement of Phase II of the hearing. The Board considers this was appropriate timing considering that some landowners may have had concerns regarding the land acquisition process. In regards to the concerns expressed by Mr. Bray for the land acquisition process, the Board would expect Westcoast to be sensitive to the needs and abilities of landowners to participate in, and understand the land acquisition process and to conduct its acquisition activities in a commensurate manner. Westcoast should keep landowners well informed on the progress of land acquisition for the Proposed Project.

In the matter of how pipelines and other land developments are permitted to occur in close proximity to each other, the Board notes the comments made by Westcoast with respect to the restrictions imposed on right-of-way use by the easement agreement and the caveats placed on the title of land that contains a pipeline. The Board notes the comments made by Westcoast that while residential development occurs close to the edge of the right-of-way in the City of Hope, there is no unauthorized development anywhere on the Southern Mainline right-of way. The Board notes also that although the CSA standards do not specify a minimum distance from the centre line of a pipeline to other developments, it does impose a location factor and class location on a pipeline, as described in section 3.2.1 of these Reasons, to provide for an increased safety factor at locations where there may be a greater risk of damage to the pipeline from third party activities or other disturbances. The Board is satisfied that Westcoast has chosen the class locations in accordance with the CSA.

The Board notes that Westcoast is in negotiations with the Cheam for land rights for a portion of the proposed Rosedale loop. In the event that the land rights are not acquired, the Board notes that Westcoast may need to consider the installation of pigging facilities at a location off the Cheam lands. In this regard the Board would impose a condition to any approval that would require Westcoast to file within the first three years of operation, an application for installation of pigging facilities on the proposed Rosedale loop.

The Board is satisfied that the land requirements for the proposed Southern Mainline Expansion are appropriate and that Westcoast's land rights acquisition process has proceeded in a timely manner.

Chapter 8

Other Issues of Public Concern

In addition to the views of the parties stated previously in this report, parties raised concerns related to:

- emergency preparedness and response;
- incident reporting;
- security;
- the potential for the Expansion gas to supply the proposed SE2 plant;
- the potential for an alternative pipeline route via Oliver, BC;
- the need for the proposed Project; and
- the Board's processes and the Fort Nelson Mainline Expansion project.

The parties also proposed that should the Board decide to approve the proposed Project, that approval should be subject to certain conditions that would address the issues raised by the public.

In considering public concerns respecting the proposed Southern Mainline Expansion, the Board is mindful of the purpose and goals of the Board as set out in the *National Energy Board Strategic Plan for 2001 to 2004* (Strategic Plan) as well as the requirements of the NEB and CEA Acts. According to the Strategic Plan, the purpose of the Board is to promote safety, environmental protection and economic efficiency in the Canadian public interest while respecting individual rights and within the mandate set by Parliament in the regulation of pipelines, energy development and trade. In support of this purpose the Board has developed four goals that guide its regulatory activities:

1. NEB-regulated facilities are safe and perceived to be safe.

2. NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

3. Canadians derive the benefits of economic efficiency.

4. The NEB meets the evolving needs of the public to engage in NEB matters.

It is in the context of the Strategic Plan, the four goals and the NEB and CEA Acts that the Board considers the issues raised by the intervenors and their proposed conditions.

8.1 Issues Raised by Parties

8.1.1 Emergency Preparedness and Response

Views of the Intervenors

Of particular concern to intervenors who reside in the Fraser Valley area was the manner in which Westcoast responds to public complaints and its communication programs for incidents and operations related to the Southern Mainline. They suggested that, in the past, Westcoast failed to react quickly and

effectively to a public complaint at Seabird Island regarding a pipeline leak and to a rupture of the Southern Mainline near the Coquihalla highway. They noted that the Seabird Island and Coquihalla highway incidents were reported to Westcoast by third parties prior to Westcoast being aware through its own monitoring controls. They were concerned that Westcoast would fail to react to future incidents in a manner that would protect public safety.

Ms. Hoekstra did not believe that Westcoast could begin to address the concerns of those who would be affected by the proposed Southern Mainline Expansion until it addressed the concerns of those who have been impacted by Westcoast's operations in the past. Mr. and Mrs. Dent expressed concerns for the lack of notification to area residents of the venting of gas from the Southern Mainline during the Seabird Island incident. The intervenors believed that Westcoast could be more forthcoming in describing its emergency response plans. The Hope Ratepayers requested a copy of Westcoast's Emergency Preparedness and Response Program.

Views of Westcoast

In response to the views expressed by the intervenors, Westcoast stated that it trains all employees across the Westcoast Energy system through a program called "Our Environment, Our Responsibility". This training program is focused on a range of environmental issues and matters related to compliance, health and safety. On the communications side, this program provides for an outward focused view that engages stakeholders at all levels; the land owner, the general public and local and regional government agencies. Westcoast stated that it endeavors to respond to all concerns or issues that it receives. In regard to public awareness, it recently developed a full-time public awareness position to address the priority and importance of external relations in respect of environmental health and safety.

Westcoast agreed to provide a copy of its Emergency Preparedness and Response Program to the Hope Ratepayers. Westcoast also agreed to meet with the Hope Ratepayers to describe the range and specifics of its public awareness program in relation to its emergency preparedness and response program.

Westcoast stated that its Southern Mainline ERP would be updated to include the proposed Expansion project. Westcoast advised that it is in the process of updating all of its emergency response plans in response to the Board's letter dated 24 April 2002. The letter was issued to all oil and gas companies under the Board's jurisdiction, wherein it clarifies the expectations for emergency preparedness and response programs. Westcoast further submitted that it would file its ERP with the Board prior to operation of the Proposed Project

Westcoast stated that its ERP contains a range of elements such as hazard assessment, emergency procedure manuals, etc. Westcoast is currently meeting with, interviewing and discussing its plans with its first responders.

Views of the Board

The Board has considered the views of the parties regarding emergency preparedness and response. The Board expects that Westcoast will have well defined policies and procedures in place for emergency preparedness and response, and for ongoing public communications during the operation phase of its pipeline system. In this regard, the Board will impose a condition on any certificate that may be granted requiring Westcoast

to file with the Board prior to the commencement of operation, an updated Emergency Preparedness and Response Plan for the proposed Southern Mainline Expansion Project and to notify the Board of any modifications to the plan as they occur. The Board expects that upon receiving a public complaint, Westcoast will immediately investigate the cause of the complaint, will implement timely and meaningful actions in order to ensure public safety, environmental protection and the security of its pipeline system, and will respond to the complainant in a timely manner to describe any actions it proposes to implement.

8.1.2 Incident reporting

Views of Parties

Several intervenors sought clarification on the criteria for reporting an incident and the reportable volumes of gas released resulting from pipeline failure.

Westcoast submitted that an incident report is required for a minimum release of 500 cubic feet of natural gas from lines operating at a pressure above 100 psi. Westcoast confirmed that it reports all incidents as defined by the OPR-99 as well as those defined by the Transportation Safety Board (TSB) Regulations.

Views of the Board

Section 52 of the OPR-99 requires a company to immediately notify the Board of any incident relating to the construction, operation or abandonment of its pipeline. Details on incident reporting procedures can be found in Appendix III of these Reasons. The Board notes that Westcoast did not adequately describe the incident reporting requirements of section 52 of the OPR-99. The Board therefore expects Westcoast to be fully aware of the Reportable Incident Definition and requirements as set out in section 52 of the OPR-99, and of the *Guidance Notes for the Onshore Pipeline Regulations, 1999 - Amendment 1* dated 28 February, 2002.

8.1.3 Safety concerns

Views of Parties

Intervenors raised concerns related to previous incidents that occurred on the Southern Mainline. They cited the Coquihalla rupture that occurred in 2000 and the Seabird Island leak that occurred in 1996. Intervenors also expressed concerns related to the frequency of pipeline inspection and monitoring.

Westcoast attributed the above incidents to integrity issues including hard spots, cracking and hydrogen embrittlement. It noted that hard spots are generated during the manufacture of the pipe. Westcoast scanned the pipeline and removed all hard spots which did not fall within the acceptable size limits established in the applicable standards. Further, in its application Westcoast confirmed that the pipe to be used in the proposed Expansion would be manufactured in accordance with CSA Z245.1 and Westcoast specifications. The standard and specifications require quality assurance performance criteria with respect to material defects and hard spots.

Westcoast stated that the pipe steel would have a higher grade than the exiting pipe on the Southern Mainline. The pipe would undergo a strength test at the mill, and before placing it in service it would be subject to a pressure test.

Westcoast stated that its system is monitored on a continuous basis. In-line inspection is performed every five to nine years. The company compares the inspection results with the previous inspection record to evaluate the corrosion growth. If the growth is significant, the company increases the inspection frequency. Westcoast also stated that the company runs cleaning pigs in its system as needed based on the pressure monitoring drops. Westcoast further stated, that during operation, it conducts regular maintenance and inspection of its facilities.

Views of the Board

The Board is satisfied that Westcoast's measures with respect to material quality assurance and pipeline monitoring and inspection are acceptable.

Should the proposed Project be approved, the Board would require Westcoast to develop and implement a pipeline control system and pipeline integrity management system according to OPR-99. The Board would carry out inspections and audits of these systems to promote safe operation of the subject facilities.

8.1.4 Security

Views of Parties

Mr. Bray expressed concerns about crossover valve assemblies and the security of those assemblies. He stated that it appears that Westcoast's current security measures do not account for the current increased threat of terrorism. Ms. Hatch and Ms. Hoekstra also expressed concerns with respect to Westcoast's security measures.

Westcoast stated that in the last year, it conducted an extensive investigation into how security can be enhanced on the pipeline system and that enhanced security measures have been undertaken or are in the process of being undertaken in operating the pipeline. Westcoast hired a security expert to review all of its facilities, including process plants, compressor stations, meter stations and pipeline facilities. Recommendations made by this consultant included such things as increased vigilance in keeping gates closed, adding intrusion devices such as cameras and switches on doors, employee training and awareness and a continued review of Westcoasts security levels at the various facilities.

Westcoast stated that security is a priority for the company in all stages of the proposed Project including the design, the day-to-day operations and the surveillance of the proposed Project. Westcoast declined to provide more detailed information on its security measures for confidentiality reasons.

Views of the Board

The Board expects Westcoast to include security measures as part of its Emergency Preparedness and Response Program as outlined in the Board's letter dated 24 April 2002. As stated in this letter, the Board has been involved in the federal government initiative to examine the security of critical infrastructure, which includes energy

infrastructure. The focus has been on assessing the level of emergency preparedness of Board regulated companies should they become targets of terrorism or other criminal activities. Finally, the Board undertakes audits to ensure compliance with the OPR-99 including security and emergency preparedness programs. The Board is satisfied with Westcoast's security undertakings.

8.1.5 Geotechnical

Views of Parties

Intervenors expressed concern about the construction of the pipeline facilities in areas of unstable terrain, areas subject to landslides, tremors and erosion, and in proximity to major highways, railways and residential areas.

Hope Ratepayers raised concerns with respect to the fragility of the soil in Hope area. They referred to the Hope slide that occurred in 1965 and to two recent earthquakes events. Ms. Hoekstra also mentioned that the Fraser Valley is a highly active earthquake zone.

Westcoast stated that in designing the proposed Project, it engaged the services of professional engineers who are experts in seismic events that occur in areas with extreme geotechnical conditions. Seismic events in these areas may cause mass wasting such as landslides. In addition, Westcoast is aware of areas along the system where there have been slides in the past, and has conducted geotechnical investigations and designed mitigative measures for those possibilities.

Westcoast further stated that compressor station facilities are designed in accordance with BC building codes which require specific mitigative measures for facilities subjected to earthquakes.

Views of the Board

The Board is satisfied with the information provided by Westcoast in its geotechnical report. This report describes the impacts of seismic activities of an earthquake and the appropriate mitigative measures considered in the design of the proposed Expansion.

In addition, the Board will impose a condition on any certificate that may be granted requiring Westcoast to file with the Board for approval prior to commencement of operation of the Alexandria and Hope loops, its slope stability monitoring programs for those loops and requiring Westcoast to implement the approved programs.

8.1.6 Proposed Sumas Energy 2 Inc. Electrical Generation Plant

Views of the Parties

Many intervenors expressed significant concern that gas from the proposed Expansion Project would eventually be directed to the proposed SE2 gas fired electrical generation plant in Washington state, which could result in harmful emissions being released into the Fraser Valley airshed.

In response, Westcoast explained that it is a nondiscriminatory utility transportation provider for its shippers and that Westcoast neither owns the gas it ships, nor does it have significant information about,

or control over, the end use of gas being shipped on its system. Westcoast consistently stated that none of the gas from the proposed Expansion Project was contracted for the proposed SE2 plant. Westcoast noted that there are no legal or regulatory barriers imposed on the SE2 plant, or like projects; hence, Westcoast would likely have discussions relating to supply of natural gas to the SE2 plant during the normal course of business, should the opportunity arise. Westcoast also stated that if the proposed SE2 facility proceeded, it would be a new facility and would require new servicing facilities. Any new servicing facilities proposed by Westcoast for the proposed Project would have to be considered by the appropriate regulatory authorities under future applications.

Views of the Board

The Board notes that natural gas pipelines are contract carriers and, as such, are obligated to carry a product for those shippers who have entered into transportation contracts with the pipeline company. Contract carriage confers a right to transportation service on a shipper; therefore, Westcoast is obligated to transport gas for its contracted shippers regardless of the final destination of the gas. In addition, section 67 of the Act prohibits a company from making "any unjust discrimination in tolls, service or facilities against any person or locality". While the Board is cognizant of intervenor concerns relating to end use, it also notes that each end use facility must comply with the regulations and standards administered by the appropriate jurisdictions. The Board notes that if in the future Westcoast should apply to the Board for facilities for the purpose of providing transportation service to the proposed SE2 plant, that application would need to address the requirements of the Guidelines respecting an EPN program for the proposed Project. The Board expects that Westcoast will note the high level of concern expressed by the intervenors over this issue, and in the event that Westcoast proposes any such further transportation facilities, it will develop an ongoing consultation program that is inclusive, clear, accessible and responsive to all potentially interested stakeholders.

8.1.7 Alternative Route Via Oliver, BC

Views of the Parties

Some intervenors questioned Westcoast on a potential alternative route via Oliver, BC through the BC Gas pipeline to transport the proposed Expansion gas to the US market. They stated that they were not opposed to export of natural gas but believed that the point of entry to the US could be at Oliver, BC as opposed to Huntingdon. This alternative route would eliminate the Hope and Rosedale loops and the additional compressor at Station 8B. Ms. Hoekstra argued that if Westcoast really wants to supply the US market while being environmentally friendly, it should seek an alternative route that would allow delivery to that market while keeping unnecessary emissions out of the Fraser Valley airshed.

Westcoast responded to these questions by indicating that there are no BC Gas facilities capable of transporting the proposed Expansion gas to Oliver. Also, there are no pipeline interconnections at Oliver capable of transporting gas to markets in the US Pacific Northwest. Westcoast stated that for these reasons, it had not discussed with BC Gas the possibility of transporting gas through BC Gas facilities to Oliver.

Views of the Board

In considering the alternative route proposed by the intervenors the Board notes the comments made by Westcoast that no facilities currently exist that are capable of transporting the proposed Expansion gas to Oliver. The Board further notes that its jurisdiction does not extend to provincially regulated facilities, such as the BC Gas pipeline system.

8.1.8 Need for the Proposed Project

Views of the Parties

During Phase I of the GH-1-2002 proceeding, intervenors raised a number of concerns, which relate to the interpretation of "public interest", "public convenience and necessity", "need" and the significance of jobs lost due to the Westcoast-Duke merger.

Ms. Hatch expressed a concern relating to the broader public interest in terms of consequences of the proposed Expansion Project. She believed that the proposed Expansion did not pass the test for "public convenience and necessity". She linked this statement to her concerns regarding the need for more research and development into other forms of energy, that is, clean alternatives to the burning of fossil fuels. In a similar argument, GSXCCC requested a clarification from Westcoast of its definition of "need". GSXCCC noted that Westcoast did not use the word "need" in the same context as it is used in the CEA Act or as it falls within the definition of sustainability in the Brundtland report. Also, the Hope Ratepayers asked Westcoast to outline the benefits that BC residents would see arising from the proposed Expansion Project as a component of the need for the Proposed Project.

In reply to the intervenors' views regarding the need for the Proposed Project, Westcoast submitted that hundreds of thousands of BC natural gas consumers rely on Westcoast to deliver gas, which is a principal source of energy in homes and businesses in the province. The Province of BC realizes direct revenue from oil and gas exploration, development and production activity in northeast BC, estimated to be approximately $2 billion per year. In addition, the Province and the various communities through which the pipeline passes realize considerable economic benefit, including approximately $54 million in property taxes paid by Westcoast each year. For example, property taxes paid directly to the District of Hope by Westcoast amounted to approximately $857,000 in 2001.

Westcoast stated that the proposed Expansion Project does pass the NEB test for "public convenience and necessity" as the proposed Project is a response to shipper requirements. Westcoast explained that the proposed Expansion responds to shippers' need, or demand, for transportation service, noting that in turn Westcoast's shippers are responding to their customers' need, or demand, for natural gas. Westcoast essentially agreed with the GSXCCC interpretation that when Westcoast referred to "need", it was used as a synonym for "demand".

Westcoast confirmed for the intervenors that, as of 1 July 2002, 129 positions had been eliminated from the Westcoast Energy organization, which represented an estimated $13 million annual savings to Westcoast-Duke.

Westcoast considered Ms. Hatch's interpretation of "broader public" interest to be related to the Board's Goal Three, which is "Canadians derive the benefits of economic efficiency".

Views of the Board

Regarding Ms. Hatch's concern relating to "public convenience and necessity", the Board believes that some clarification is required. The Board may, subject to the approval of the Governor in Council, issue a certificate in respect of a pipeline if it is satisfied that the pipeline will be required by the present and future public convenience and necessity. In considering an application for a certificate the Board may have regard for the following:

- the economic feasibility of the proposed Project;
- the availability of gas to the pipeline;
- the existence of markets, actual or potential;
- the financial responsibility and financial structure of the Company, the methods of financing the Proposed Project and the extent to which Canadians will have an opportunity to participate in the financing, engineering and construction of the Proposed Project; and
- any other public interest that in the Board's opinion may be affected by the granting or refusing of the application.

The Board is required to conduct a public hearing in order to test the evidence placed on the record for a certificate application. If the application is able to pass the tests listed above and if it is shown that the Proposed Project will meet applicable environmental and safety requirements, the Board may issue a Certificate of Public Convenience and Necessity.

In regard to economic efficiency, the Board measures whether or not its Goal Three is being met by considering evidence that energy markets are working well. In terms of natural gas, one component of an efficient energy market is an efficient pipeline infrastructure that meets the needs of its users. An inefficient pipeline infrastructure may not have sufficient capacity to meet demand, thereby causing a bottleneck, which may lead to price spikes if supply is constrained. The Board ensures that a proposed pipeline, or pipeline expansion, will meet the needs of its users by having the applicant satisfy the economic feasibility requirements, which have been outlined in Chapter 4 of these Reasons. An efficient energy market ensures that Canadians receive the maximum benefit from their energy resources, but not at any cost. If approved by the Board, most projects are subject to certain approval conditions, such that costs are minimized. A detailed explanation of Goal Three is provided in the National Energy Board's *Annual Report 2001*.

The Board agrees with Westcoast that its pipeline contributes in a significant way to the economic health of BC both directly in terms of taxes paid to various governments and as an employer, and indirectly as a transportation service provider to industry and as a consumer of goods and services. The Board also notes there is a benefit to Canadians who consume the gas transported by the pipeline. The Board is mindful that any such project brings both cost and benefit to society and that it is the balance of these that the Board must consider. The Board is satisfied that there is a need for the proposed Expansion Project.

8.1.9 The Board's Processes and the Fort Nelson Mainline Expansion

Views of the Parties

During the hearing Mr. Degan, Ms. Horsfield and Ms. Hoekstra expressed concern over the lack of public notification of the Fort Nelson Mainline Expansion application. They felt that Westcoast's Fort Nelson Mainline Expansion project (the Fort Nelson Expansion) should have been considered by the Board together with, or as part of, the proposed Southern Mainline Expansion application because the two projects appeared to be connected. They noted that the Fort Nelson Expansion involves the construction of 4.0 km of looping that would allow for 43 MMcf/d of incremental gas transportation service to CS-2. They also noted that the Fort Nelson Mainline is connected to the Southern Mainline at CS-2 and that the incremental gas from the Fort Nelson Expansion could be transported on the Southern Mainline. They suggested the Board should examine its application processes to ensure that interrelated projects are considered together.

Westcoast replied to the interevenors by stating that its customers can contract on the Fort Nelson Mainline system separately from the Southern Mainline system. It stated that there are four customers on the Fort Nelson Expansion which are different than the ten customers for the proposed Southern Mainline Expansion. Further, the Fort Nelson Mainline pipeline can deliver gas to CS-2, and from there gas can be transported on the Alliance Pipeline to Chicago or into the TransCanada PipeLine Limited system to Eastern Canada. Gas can also go into a storage pool or be transported to the US through the Southern Mainline. It stated that the customers on the Fort Nelson Mainline have a choice on where to move their gas. For these reasons, Westcoast considered the Fort Nelson Expansion and the proposed Southern Mainline Expansion to be two independent projects.

Views of the Board

The Board notes that gas flowing to CS-2 from the Fort Nelson Mainline can be directed to a number of different transmission systems and that the customer base for the two projects are different. The Board does not consider the two projects to be sufficiently related such that they should be considered by the Board as one project.

The Board notes Ms. Horsfield's information requests dated 27 August 2002 regarding the approval process for the Fort Nelson Expansion. In a letter dated 12 September 2002, the Board addressed this matter. The Board stated:

The *National Energy Board Act* (Act) requires that a company proposing to build a new pipeline obtain from the Board a Certificate of Public convenience and Necessity under section 52 of the Act. The Board must hold a public hearing before making its regulatory decision. In cases where a new pipeline is less than 40 kms in length, the Act provides that the Board may issue an order under section 58, rather than a certificate under section 52. Procedures for a section 58 order are usually simplified. For example, a public hearing is normally not required, however the applicant must still meet certain requirements of the Act, the Board's *Guidelines for Filing Requirements* (Guidelines) and for some applications, the *Canadian Environmental Assessment Act*.

In the case of the Fort Nelson Mainline application, the length of the proposed pipeline is 4 km, therefore Westcoast applied under section 58 of the Act. As required by the

Guidelines, Westcoast conducted an early public notification program to advise and receive comments from the affected public, government agencies, landowners and communities regarding the proposed Project. Westcoast stated that as a result of its early public notification program, there were no issues raised by any of the parties that remained unresolved. The Board was satisfied that the application was properly filed and so conducted an environmental screening pursuant to the *Canadian Environmental Assessment Act* and a review pursuant to the requirements of the *National Energy Board Act*. The Board was also satisfied that the proposed Project was in the public interest and that a public hearing was not required in this instance. The Board thereafter issued an order that approved the Fort Nelson Mainline Expansion project.

8.2 Conditions Proposed by Parties

Views of the Intervenors

Three parties proposed that conditions should be imposed on any approval of Westcoast's application. Mr. Peachy proposed a three-part condition concerning any future discussions between Westcoast and SE2 or other proponents of electricity-generating plants. The FVRD provided six recommendations for the Board to consider. Ms. Hoekstra provided comments on some of the conditions proposed by the Board prior to Final Argument.

In proposing his conditions, Mr. Peachy made reference to many intervenors who have grave concerns about the proposed SE2 generation facility and about Westcoast's potential role in supplying SE2 with natural gas. His first proposed condition is that Westcoast be required to keep the public fully informed of any present or future discussions with SE2 or with proponents of any other proposed natural gas-fired, electricity-generating plant within 50 km of the US/Canada border regarding supply or transport of natural gas. Secondly, that Westcoast should advise any energy utility that meets the stipulated criteria, that is, either they are SE2 or they are within 50 km of the border, at the time such utility initially approaches Westcoast regarding natural gas supply or transport, that any discussions between Westcoast and that utility will become a matter of public record and that such discussion will be possible only if the utility is agreeable to this condition. Thirdly, that Westcoast advise the public immediately if it becomes aware that any natural gas currently being supplied becomes diverted or is resold in order to supply the proposed SE2 plant or another energy utility meeting the criteria stipulated.

The FVRD provided the following six recommendations for the Board to consider.

1. Westcoast be encouraged to upgrade the Rosedale compressor station to a level that is consistent with or better than the Hope station.

2. To ensure that equipment is maintained so as to minimize such strong greenhouse gas losses, we recommend that Westcoast implement a leak detection and repair program for all equipment associated with the pipeline.

3. Regulator processes for significant sources should be consistent. The permit issued by the BC Ministry of Water, Lands and Air Protection for associated pipeline emissions is not sufficiently comprehensive to provide for good regulation. Whether a single permit or multiple permits for each facility or a regulation for this industry sector are issued,

there is a need for site-specific requirements. We request the Panel consider this in its decision.

4. The possibility of disruption for some residents in the Fraser Valley Regional District, particularly in Hope, during the construction phase of the proposed Expansion should be minimized to the greatest extent possible.

5. Protection of endangered species and other biodiversity interests should be practised during construction and operation phases of the proposed Expansion. Westcoast Energy should not only comply with the applicable federal and provincial government legislation as a minimum, but should ensure that all activities associated with the proposed Expansion are consistent with the goals of conservation and ecological organization with interests in the areas through which the proposed Expansion looping passes.

6. Noise levels during compressor station operation should be reduced to the lowest practical levels achievable, and monitoring of the levels should be conducted following installation of the new compressor.

As opposed to proposing conditions, Ms. Hoekstra provided comments during argument on the Board's proposed conditions. In regard to the blanket condition requiring Westcoast to file with the Board a statement of the reasons for non-compliance, Ms. Hoekstra wondered how the Board would proceed in such a case and whether there is any way for other interested parties to ensure that there is compliance.

Ms. Hoekstra expressed concern over the timeframes Westcoast would have to notify the Board of pre-construction activities by relating these timeframes to those provided to landowners. Specifically, her concern focussed on the proposed conditions of requiring Westcoast to file a construction schedule at least seven days prior to commencement of construction and to notify the Board at least five days prior to pre-construction job meetings. She did not feel that these minimum timeframes would be sufficient if they also applied to impacted landowners and proposed that 30 days would be more appropriate.

Ms. Hoeskstra addressed conditions relating to air emissions and monitoring at Westcoast's CS-8B. Specifically, she addressed the conditions requiring Westcoast to file a monitoring program prior to the operation of the new compressor unit at CS-8B as well as the condition requiring Westcoast to file, on an annual basis, the results of its NO_x and PM monitoring program with respect to CS-8B. Mrs. Hoekstra's concern with these conditions appears to be based on an understanding that the compressor at CS-8B was not going to be replaced for another five to seven years.

Lastly, Ms. Hoekstra questioned the condition that Westcoast file a summary of any complaints received within 60 days of commencement of operation of each compressor. In questioning this condition, she made the point that it seems there is a huge gap between residents and appropriate personnel and lack of documentation regarding residents' complaints. She asked that if Westcoast has no direct contact with residents in regard to this issue, is the onus on the residents to know that they can come forward to someone, although they may not know who, with their complaint?

Views of Westcoast

Westcoast addressed the FVRD's recommendations during cross-examination by the Board. Westcoast's responses are as follows:

1. Westcoast anticipates the two units in the Rosedale compressor being replaced in the next five to seven years.

2. As a result of Westcoast's greenhouse gas monitoring program, it has implemented a fugitive gas monitoring program. Each facility is tested for fugitive leaks, and that information is passed on to Westcoast's operations department for consideration for repair or replacement.

3. Westcoast has been invited by the FVRD to work together and to attend meetings of the air shed management committee. Westcoast believes they can come to some sort of remedy that will give the FVRD the comfort that it requires with respect to emissions in the Fraser Valley air shed, and that could take the form of a minor amendment to the permit.

4. Minimizing the disturbance to the residents of the Fraser Valley around and during the construction is one of the factors in the construction plan that Westcoast would be discussing with the prime contractor.

5. Westcoast believes it has done in its environmental assessment what the FVRD suggests.

6. Westcoast's view is that the significant discussion around "noise" in this proceeding should address the FVRD's concern.

Westcoast did not address the comments of Ms. Hoekstra in its rebuttal argument.

Regarding the possibility of gas from the proposed Expansion being used by the proposed SE2 electrical generation facility, Westcoast indicated that all of the proposed Expansion gas had been allocated to others and that none was going to that facility. Westcoast indicated that a condition requiring it to inform the public about future discussions with operators of electrical generation facilities might be an unnecessary burden, as well as may disclose competitive information.

Views of the Board

The Board notes that there is no evidence that this application is connected in any way with the SE2 proposed plant or any other facility about which intervenors expressed concern. The Board does not consider it appropriate to impose a condition to address a potential future project that is not within the realm of the current application. The Board notes that if and when an application is filed by Westcoast for facilities to provide transportation service to any gas-fired electrical generation facilities, that application would be considered on its own merits. The Board's decision on the proposed Southern Mainline Expansion cannot fetter the Board's discretion on a future application. However, the Board notes the high level of public concern over this issue and expects

Westcoast to integrate this concern into the planning and implementation of any future EPN programs for the type of transportation facilities described by the intervenors.

The Board takes note of the recommendations provided by the FVRD and believes that these issues are adequately addressed through the commitments made by Westcoast in its application, filings and at the hearing, and by the proposed conditions. The Board is encouraged by Westcoast's commitment to meet with the FVRD to continue to work together to address these issues.

With respect to Ms. Hoekstra's comments on the proposed conditions the Board would like to be clear that it conducts construction and environmental inspections throughout the construction phase of a project. Should the project be approved, in order to ensure that Westcoast is abiding by all of its commitments made during the GH-1-2002 proceeding and in its application, Board Inspection Officers have the authority to monitor Westcoast's activities for compliance during the construction and operation phases of the proposed Project. Board Inspection Officers have various levels of enforcement tools available, both in the field and in the office, to address any non-compliance matters, up to and including stop work orders.

Board staff require five and seven days notification prior to the commencement of construction to allow Board Inspection officers adequate time to schedule its inspection activities. Construction progress reports also permit the Board to monitor the timing and progress of construction and to plan additional inspection activities. Should the project be approved, the Board considers the monitoring program required by the conditions to be appropriate.

With respect to potential future complaints, section 8.1.1 of these Reasons discusses the Board's expectation that upon receiving a public complaint, Westcoast will immediately investigate the cause of the complaint and will respond to the complainant in a timely manner to describe any actions it proposes to implement to address the complaint. The Board also has a formalized process in place for dealing with any complaints that are received during the construction and operation of its regulated facilities. The Board would forward the complaint to the company involved and ask that the company respond in writing to the Board and the complainant, indicating how it proposes to resolve the complaint. After the Board and the complainant receive the company's response, the Board would contact the complainant to determine if the proposed resolution is satisfactory. If the complainant rejects the proposed resolution, the Board may ultimately decide if further action is required from the company.

The Board is satisfied that should the Project be approved, the proposed certificate conditions are appropriate to address the respective issues. The Board notes that the conditions would be tracked to ensure that Westcoast complies with each condition and to ensure that the desired end result of each condition is achieved.

Chapter 9

Disposition

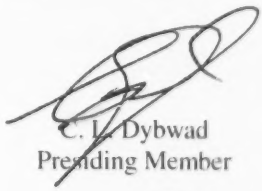
The foregoing constitutes our Decision and Reasons for Decision in respect of the Application heard before the Board in the GH-1-2002 proceeding.

The Board is satisfied from the evidence that the proposed Southern Mainline Expansion facilities are and will be required by the present and future public convenience and necessity. The Board approves Westcoast's Application made pursuant to section 52 of the NEB Act for the Expansion Project facilities and will, subject to the approval of the Governor in Council, issue a certificate subject to the conditions set out in Appendix II.

The Board also grants relief from the requirement to file proforma financial statements, details respecting the proposed return on rate base and on provisions for income taxes, as well as a throughput summary, all as required by Part III, subsection 25(b) of the Guidelines.

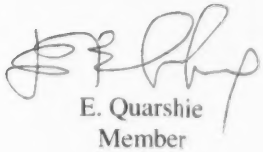
The Board has determined that granting an exemption for some piping systems from the requirements of Order MO-08-2000 would not compromise the safety of the public or the employees of the company, or cause a detriment to property and environment. The Board grants an exemption from Order MO-08-2000 in respect to certain piping systems of the Expansion Project facilities.

With regard to the determination regarding toll methodology, the Board confirms that the rolled-in toll methodology will continue to apply to the Southern Mainline and the Expansion Project facilities and the toll for the 105 MMcf/d of firm service to be provided by Westcoast to BC Gas from Kingsvale to Huntingdon be the Inland Delivery Area Differential Toll.



C. L. Dybwad
Presiding Member

J. S. Bulger
Member



E. Quarshie
Member

Calgary, Alberta
January 2003

Appendix I

List of Issues

1. The need for the proposed facilities, including gas supply, markets and economic feasibility.

2. The appropriateness of the design of the proposed facilities.

3. The safety of the design and operation of the proposed facilities.

4. The potential environmental and socio-economic effects of the proposed facilities, including those factors outlined in subsection 16(1) of the *Canadian Environmental Assessment Act*.

5. The appropriateness of the route selection, land requirements and land rights acquisition process.

6. The appropriate terms and conditions to be included in any approval that may be granted.

As a result of a motion filed by the Cariboo Tribal Council (CTC) additions were made to the list of issues. These additional issues were to be addressed by the CTC and other parties at a hearing scheduled to hear the CTC motion. Prior to that hearing, the CTC withdrew its motion, its intervention and its assertion that there had been a failure to fulfill the obligation to consult with the members of the CTC. As a result no submissions were made on these issues and they were not addressed by the Board. The issues added were:

7. Whether Crown consultation with the CTC has taken place.

8. Whether the Board is obliged under the *Canadian Environmental Assessment Act* to fulfil the Crown's duty to consult with the CTC.

9. Whether the Board is required to ensure that there has been Crown consultation prior to rendering the *Canadian Environmental Assessment Act* decision.

10. Whether the Board may render a decision pursuant to the *Canadian Environmental Assessment Act* or the *National Energy Board Act* absent Crown consultation with the CTC

Appendix II

Proposed Certificate Conditions

General

1. Unless the Board otherwise directs, Westcoast shall cause the approved facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings, schedules and other information or data set forth in its Application or as otherwise adduced in evidence before the Board in the GH-1-2002 proceeding.

2. Unless the Board otherwise directs, Westcoast shall implement or cause to be implemented all of the policies, practices, and procedures for the protection of the environment included in or referred to in its Application or as otherwise adduced in evidence before the Board during the GH-1-2002 proceeding.

3. Westcoast shall notify the Board in writing as non-renewed transportation service commencing 1 November 2003 is contracted.

4. Within 30 days of the date that the approved facilities are placed in service or of the date that the last order was issued for leave to open, Westcoast shall file with the Board a confirmation, by an officer of the company, that the approved facilities were completed and constructed in compliance with all applicable conditions in this Certificate. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed.

Prior to Commencement of Construction

5. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction or or as otherwise directed by the Board, its Environmental Protection and Reclamation Plan (EPRP) for implementation during construction. Westcoast shall implement the approved EPRP.

6. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of the Hope loop, its crossing plans and contingency measures for the Coquihalla River and Silverhope Creek. With this plan, Westcoast shall provide evidence to demonstrate that consultation has occurred with the Department of Fisheries and Oceans in the development of the plans. Westcoast shall implement the approved plans.

7. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of the McLeod Lake loop or as otherwise directed by the Board, its replacement plans for the existing culverts that are blocking fish passage at kilometre posts 22.2 and 22.7 on the McLeod Lake loop. Westcoast shall implement the approved plans.

8. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of the 150 Mile House loop or as otherwise directed by the Board, a monitoring

program to evaluate the effects of construction activities on osprey at a nest location approximately 250 metres west of kilometre post 9 on the 150 Mile House loop. Westcoast shall develop the plan in consultation with experts with experience in this area of study. Westcoast shall implement the approved program.

9. Westcoast shall file with the Board for approval, at least 21 days prior to commencement of construction of each pipeline loop or as otherwise directed by the Board, its Tree Replacement Plan for that loop. The plan shall include site specific details, a monitoring program and a reporting schedule. Westcoast shall implement the approved plans.

10. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of the 150 Mile House loop or as otherwise directed by the Board, a specific mitigation plan for each of the four rare plant communities encountered on the 150 Mile House loop. Westcoast shall implement the approved plans.

11. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of the 150 Mile House loop or as otherwise directed by the Board, a specific follow-up plan to test the effectiveness of the mitigation plans identified in condition 10. Westcoast shall implement the approved plan.

12. Westcoast shall file with the Board, at least 30 days prior to the commencement of operation, an updated Emergency Preparedness and Response Plan for the Southern Mainline Expansion Project and shall notify the Board of any modifications to the plan as they occur. In preparing its Emergency Preparedness and Response Plan, Westcoast shall refer to the Board letter dated 24 April 2002 entitled *Security and Emergency Preparedness and Response Programs* addressed to all oil and gas companies under the jurisdiction of the National Energy Board.

13. Westcoast shall file with the Board, at least 30 days prior to the commencement of construction or as otherwise directed by the Board, its Environmental Education Program and shall notify the Board of any modifications to the program as they occur. Westcoast shall implement the program.

14. Westcoast shall file with the Board, at least 7 days prior to the commencement of construction, a detailed construction schedule or schedules for the Project. Westcoast shall notify the Board of any modifications to the schedule or schedules as soon as they occur. Westcoast shall also provide the detailed construction schedule or schedules to each landowner other than the Crown, at least 30 days prior to commencement of construction on the property of each of those landowners. Westcoast shall notify the landowners of any modifications to the schedule or schedules as soon as they occur.

15. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction or as otherwise directed by the Board, its final mitigative measures with respect to heritage resources. In its filing, Westcoast shall provide evidence regarding the fulfilment of the report obligations for Heritage Permits 2002-166; 2002-174 and 2002-178, and any recommended mitigation. Westcoast shall implement the approved mitigative measures.

16. For each pipeline loop, Westcoast shall file with the Board for approval, at least 30 days prior to commencement of construction of that loop, or as otherwise directed by the Board, for each pipeline loop, its final mitigative measures with respect to potential impacts of that pipeline loop on the use of lands and resources for traditional purposes by aboriginal persons. In its filing for each pipeline loop, Westcoast shall provide evidence with respect to the opportunities provided to participants in the Traditional Land Use Study to comment on the draft Traditional Land Use Study report and the mitigative measures for that pipeline loop, and shall provide any comments received.

17. Westcoast shall file with the Board, at least 30 days prior to the commencement of construction:

    (a) a construction safety manual pursuant to section 20 of the *Onshore Pipeline Regulations, 1999* (OPR-99);
    (b) a field joining program which contains procedures to be used for field joining of the Southern Mainline Expansion Project pursuant to section 16 of the OPR-99; and
    (c) Westcoast's Pipeline Construction Specifications.

18. Westcoast shall file with the Board, at least 14 days prior to the commencement of construction or as otherwise directed by the Board, a construction inspection program. The construction inspection program shall include a detailed list of the number and type of each inspection position, including job descriptions, qualifications, roles, responsibilities, decision-making authority and reporting structure of personnel responsible for inspection of the various approved facilities construction activities, including environment and safety. Unless the Board otherwise directs, Westcoast shall have an on-site safety inspector present during all phases of construction at each loop and site. Westcoast shall implement this program.

19. Westcoast shall file with the Board, at least 30 days prior to the commencement of construction or as otherwise directed by the Board, a description of its Construction Audit Program. The program shall include the audit schedule or mechanisms which would trigger the audit program, the roles and responsibilities of the audit team, the audit objectives and methodology, and the means of verifying that findings of non-compliance are being resolved for the various approved facilities construction activities, including environment and safety. Westcoast shall implement this program.

20. Westcoast shall notify the Board at least 5 days prior to each pre-construction job meeting with key contractors, inspectors and other parties involved in the construction of the project.

21. Westcoast shall file with the Board, prior to the commencement of construction, a noise assessment for compressor station 8B. The assessment should include:

    (a) the existing daytime and night time ambient noise levels without the compressors at 8B operating;
    (b) a discussion as to whether, based on these levels, any reductions to the Permissible Sound Levels proposed for the station are warranted; and
    (c) any further mitigation that Westcoast would undertake to address (b).

During Construction

22. The piping systems being designed and constructed in accordance with ASME B31.3-1996, that will not be used to transport sour gas substances and having a design pressure of 2000 kPa or less, shall be exempt from the requirements of Order MO-08-2000 subject to the condition that Westcoast shall perform nondestructive examinations on exempted piping systems in accordance with the specification or standard to which the piping system is designed and with due consideration to the risk imposed by those piping systems.

23. Westcoast shall file with the Board for approval, at least 30 days prior to conducting pressure testing, a pressure testing program pursuant to section 23 of the OPR-99 and any specific mitigative measures that Westcoast intends to use for hydrostatic testing.

24. During construction Westcoast shall maintain at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation. Westcoast shall implement these procedures.

25. Westcoast shall file construction progress reports with the Board on a weekly basis for the Coquihalla River crossing, the Silverhope Creek crossing and the Hope Loop; on a semi-monthly basis for the other pipeline loops; and on a monthly basis for the compressor stations, in a form satisfactory to the Board. The reports shall include information on the activities carried out during the reporting period, environmental issues, environmental non-compliance and resolution of each issue.

Prior to Operation

26. Westcoast shall file with the Board, 7 days prior to the commencement of operation, a schedule of when it expects to conduct the audit program identified in subsection 53(1) of OPR-99 in respect of the approved facilities.

27. Westcoast shall file with the Board, prior to operation of the pipeline loops, its Integrated Vegetation Management System. Westcoast shall implement its system.

28. Westcoast shall file with the Board for approval, at least 30 days prior to commencement of operation of the Alexandria loop or as otherwise directed by the Board, its slope stability monitoring program for this loop. Westcoast shall implement the approved program.

29. Westcoast shall file with the Board, within 6 months of completion of construction activities or as otherwise directed by the Board, a report that describes, with the exception of the Coquihalla River and Silverhope Creek:

    (a) the fish habitat enhancement measures undertaken and their locations;
    (b) the results of any monitoring conducted for those measures; and
    (c) any requirements from the Department of Fisheries and Oceans.

30. Westcoast shall file with the Board, at least 30 days prior to operation of the new compressor units at stations 2B, 5 and 8B:

(a) the proposed testing regime for compressor units at stations 2B, 5 and 8B with respect to the Emission Testing Priority Index; and
(b) a Discharge Monitoring Program for Nitrogen Oxides (NO_x) and Sweet Natural Gas, in accordance with provincial requirements and with respect to compressor stations 2B, 5 and 8B.

Westcoast shall implement the program.

31. Westcoast shall file with the Board for approval, at least 30 days prior to the operation of the new compressor unit at station 8B, a program to validate the predicted NO_2 and PM (10 and 2.5) maximum ground level concentrations. The program should consider but not be limited to:

(a) on site collection of meteorological data prior to and during at least one year of operations;
(b) ambient air quality sampling in the vicinity of station 8B;
(c) data obtained from conditions 32 and 33;
(d) an evaluation of the validity of the modeling submitted in the Application based on a) through c);
(e) a comparison to concentration levels recorded at existing emission monitoring sites; and
(f) further modeling in the event that sampling or the data from a) though e) deviates from the assumptions used in the modeling provided in the Application.

<u>During Operation</u>

32. Unless the Board otherwise directs, Westcoast shall file with the Board, on an annual basis, the results of its testing regime and discharge monitoring as required by condition 30 with respect to compressor stations 2B, 5 and 8B. Westcoast shall file with the Board any changes to these programs as they occur.

33. After commissioning of the compressor units at compressor stations 2B, 5, and 8B, Westcoast shall perform stack tests on each of the units on an annual basis. Test results shall be compared to the turbine manufacturer's emission data and reported to the Board. Should reasonable agreement exist between the test results and turbine manufacturer's emission data, Westcoast may apply to the Board to have subsequent annual testing suspended.

34. Westcoast shall file the results of the program required by condition 31 on an annual basis. Should the program results provide reasonable validation of the modeling submitted in the application, or otherwise demonstrate that the worst case ground level concentrations of NO_2 and particulate matter of the project in combination with the background levels would be within federal and provincial air quality guidelines, Westcoast may apply to the Board to have the program suspended.

35. Westcoast shall file with the Board, within 60 days of commencement of operation of each compressor or as otherwise directed by the Board:

(a) a compliance noise survey addressing both daytime and nighttime noise levels;
(b) a summary of any complaints received;
(c) the program for further noise impact assessment to address both complaints and the event that any receptor is subjected to an increase of more than 5 dBA or more from existing ambient noise levels; and
(d) a discussion of any further mitigation planned, the timing of the mitigation, and the criteria that would be used to determine if further mitigation is required.

36. In the event that Westcoast does not construct the pigging facilities for the Rosedale loop as applied-for, it shall file with the Board, within one year of commencement of operation of the Rosedale loop, a detailed description of its plans, including timelines, for pigging the Rosedale loop.

Expiration of Certificate

37. Unless the Board otherwise directs prior to 31 December 2004, this certificate shall expire on 31 December 2004 unless the construction and installation with respect to the applied-for facilities has commenced by that date.

Appendix III

The Board's Incident Reporting Requirements and Procedures

The following is an excerpt from the National Energy Board's *Guidance Notes for the Onshore Pipeline Regulations, 1999 - Amendment 1, 28 February 2002.*

Incident Reports

GOAL: **To provide timely and factual reporting of all incidents.**

Section 52 of the *Onshore Pipeline Regulations - 1999* states:

52 (1) A company shall immediately notify the Board of any incident relating to the construction, operation or abandonment of its pipeline and shall submit a preliminary and detailed incident report to the Board as soon as is practicable.

(2) After notification of an incident, an inspection officer may partially or completely relieve a company from the requirement to submit a preliminary and detailed incident report.

GUIDANCE NOTE

Effective 01 September 1999, all incidents and occurrences as defined within the *OPR-99* and the *Canada Labour Code, Part II* should be reported to the Transportation Safety Board (TSB) Occurance Hot Line (819) 997-7887 (collect calls accepted). Preliminary and detailed reports must also be directed to the TSB at the address indicated below. The TSB will forward all applicable reports to the NEB.

Transportation Safety Board of Canada
Place du Centre, 4th floor
200 Promenade du Portage
Hull, Quebec
K1A 1K8

e-mail: Roger.Hornsey@tsb.gc.ca (or)
Larry.Gales@tsb.gc.ca
Fax: (819) 953-7876

A preliminary incident report shall be provide to the Board as soon as practicable following the discovery of an incident and should include (but not be limited to), to the extent that the information is available:

(a) the area affected, the substance involved and an estimate of the volume released, and the nature, location, date and time of the incident;
(b) the name and occupation of every person killed as a result of the incident;
(c) the name, occupation, condition, and current location of every person that sustained a serious injury;
(d) a description of any interruption of or reduction in service resulting from the incident;
(e) a description of the actions taken by the company to protect the public and the environment;

(f) a description of the repairs made or to be made by the company and the anticipated date of return to service of the pipeline;
(g) the availability of the damaged parts of the pipeline;
(h) the nature and extent of any adverse environmental effects;
(i) the nature and extent of any concerns expressed to the company by the public related to the incident;
(j) a descriptive assessment of any continuing hazards resulting from or related to the incident;
(k) other significant facts that are known to be relevant to the cause of the incident; and
(l) a list of the witnesses who notified the company, along with their addresses and telephone numbers.

A detailed incident report shall be provided to the Board as soon as detailed information is available and should include (but not be limited to):

(a) a detailed description of the adverse environmental effects of the incident on terrain, property, livestock, fish, wildlife and habitat of fish and wildlife;
(b) a description and evaluation of the clean-up and disposal methods used or proposed to be used;
(c) a description of all measures taken or proposed to be taken to restore the terrain where the incident occurred;
(d) a description of the monitoring undertaken or proposed to be undertaken to determine the success of the restoration measures;
(e) where the incident involved the spillage of LVP hydrocarbons, liquid test medium or any toxic substance, an outline of the program the company proposed to follow to rehabilitate the affected area;
(f) a description, sketch or photograph of the area affected by any fluids that escaped from the pipeline as a result fo the incident;
(g) a detailed description of the incident including the events leading up to and following the incident;
(h) comments, sketches, drawings or photographs relevant to the incident that are necessary for a complete understanding of the incident;
(i) corrective actions to be taken to prevent similar incidents from occurring in the future; and
(j) details regarding the failure mechanism and a detailed analysis of the failed component (if applicable).

For assistance in completing a detailed incident report, companies are referred to the Board's "Detailed Incident Report" form. This form may be obtained from the NEB website at http://www.neb-one.gc.ca/pubs/incidnt.e.pdf

Reportable Incident Definition

Section 52 of the Onshore Pipeline Regulations defines an incident which is reportable to the Board as every incident relating to the construction, operation or abandonment of a pipeline that results in:

(a) the death or serious injury to a person;
(b) a significant adverse effect on the environment;
(c) an unintended fire or explosion
(d) an unintended or uncontained release of LVP hydrocarbons in excess of 1.5 m^3;
(e) an unintended or uncontrolled release of gas or HVP hydrocarbons;
(f) the operation of a pipeline beyond its design limits as determined under CSA Z662 or CSA Z276 or any operating limits imposed by the Board.

Canada